

FLIGHT

First Aero Weekly in the World.

Founder and Editor: STANLEY SPOONER.

A Journal devoted to the Interests, Practice, and Progress of Aerial Locomotion and Transport.

OFFICIAL ORGAN OF THE ROYAL AERO CLUB OF THE UNITED KINGDOM.

No. 344. (No. 31, Vol. VII.)

JULY 30, 1915.

[Registered at the G.P.O.] [Weekly, Price 8d.
as a Newspaper. Post Free, 8½d.]

Flight.

Editorial Office: 44, ST. MARTIN'S LANE, LONDON, W.C.

Telegrams: Truditur, Westrand, London. Telephone: Gerrard 1828.

Annual Subscription Rates, Post Free.

United Kingdom ... 15s. od. Abroad ... 20s. od.

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EDITORIAL COMMENT.

The New Aircraft Insurance Act.

By the time this week's *Flight* reaches the public the new National Insurance Act providing against damage by hostile aircraft will have been in active operation for close upon a fortnight. Taken on the whole, the result may be pronounced eminently satisfactory, and although there has not been an abnormal rush to take advantage of the terms offered by the Government, this is by no means discouraging, in fact it is probably a blessing in disguise, as it has enabled the insurance offices and their agents and the Government office to settle down into the routine of the new conditions without the inconvenience which a big boom might well bring with it. It also demonstrates that alarm as to the damage which may result from Zeppelin visits is as mild in its character as it has always been counselled in *Flight* it should be. We must not be understood to suggest from the foregoing that the operation of the Act is a fiasco. Quite the contrary. A very large amount of covering has been effected, and this is steadily increasing day by day, as property owners have had time to digest the scheme put forward for general protection. It needs but an air raid of the usual character for a huge rush to insure from all sections of the community, and by that time the insurance companies

will be thoroughly prepared to cope with the work, however big it may prove to be. Some doubt has been expressed in regard to the Government still giving compensation as hitherto to those who may fail to insure, but this has been finally disposed of by an announcement from the Board of Trade to the effect that "now a public scheme has been established no liability can be accepted by the Government, and no claim can be entertained, in respect to damage to property by aircraft or bombardment unless the property has been insured under the scheme."

Up to the date of the new Act, as our readers are aware, all cases of damage were investigated by the special Government Committee over which Lord Parmoor presided, and payments in compensation were allotted out of the National Revenue. In this connection a very strong protest was made in the House of Lords last week by Lord Parmoor, who appeared to have a reasonable grievance. He stated that in passing their bill, the Government had entirely ignored the special Aircraft Insurance Committee and all their work. This Committee had accumulated a vast amount of information and statistics, which was placed at the disposal of the Treasury in order that the national insurance scheme might be formulated on a business basis. But, Lord Parmoor declared, although the suggestion was courteously received, the Committee had not been consulted from beginning to end, nor had they heard from the Board of Trade, which department it appeared had "with the assistance of insurance experts" been thrashing out the scheme to be placed before Parliament. Rightly or wrongly, Lord Parmoor contended that the result had been that the rates of premium were hopelessly wrong. In no case were the rates justified by facts as they had been ascertained by the Committee. His contention was that they were scheduled upon much too high a scale. He said upon this point:—

"I now turn to the schedule of rates, because it is this schedule that appears to me to be an absolutely absurd burden, according to our experience, upon the householder, or the person in occupation of premises, or as regards stock. I know, of course, that we are dealing with this on the flat-rate principle. I think myself that probably the flat-rate principle is right; I am not finding any fault with that. The first is buildings; the rate is 2s. against aircraft only, and 3s. against aircraft and bombardment. That is exactly cent. per cent. higher than according to our experience; it ought to have been 1s. and 1s. 6d. instead of 2s. and 3s. I am at a loss to understand how any such figure has been arrived at. I should like to know what the Committee had before them to lead them to fix such an extravagant figure, having regard to the real nature of the risk.

"Perhaps more extraordinary still is item No. 3, 'Farming Stocks (live and dead)'; the rates here are 3s. and 4s. 6d. respectively. In our opinion 1d. or 2d. would be ample, and I will

explain why that is. To begin with, the country districts are not aimed at, and the damage done there is only by accident. What the raids aim at are the industrial centres, and particularly those where munition works are being carried on. In a case which came before my Committee where a bomb had been dropped amongst crops, there had been no damage that exceeded 3s., 4s. or 5s.—nothing but the cost of filling in the hole. Again, in no case has the crop itself been damaged. Then with regard to the farmer's stock, he has not his whole stock in one place, as in the case of munitions. We have had a large number of farmers' claims, and the whole of them have been settled at a really nominal figure. It is really out of all proportion to suggest such a sum as 3s. and 4s. 6d. respectively on farming stocks, live and dead. . . .

"Then as to 'Contents of all buildings other than those specified in Nos. 1 and 5.' Here the rates are 5s. and 7s. respectively. I do not know where any such figures can possibly have come from. Lastly, as regards certain merchandise and so on the rate is 7s. 6d. and 10s. respectively. These figures are so extravagant in proportion to our experience that I can only say frankly that I cannot understand on what basis they have been fixed."

In view of the fact that Lord Parmoor is one of those who, we believe, held the opinion, as has been advocated in *Flight*, that it would have been better for the Government to have taken over full responsibility for damage by aircraft as a national liability, it is not surprising that he should protest against what appears to him to be a really remunerative Government trading proposition at the cost of the public. But, after all, the individual cost is not very serious, and there is the distinct advantage that any margin of profit accruing from the scheme must, in the natural order of things, go into the public exchequer and become an asset to lessen, in however small a degree, the amount which has to be found by the people for the successful prosecution of the war.

Another feature of the scheme criticised by Lord Parmoor was the remuneration to the insurance offices and their agents of 10 per cent. plus 5 per cent. According to the experience of his Committee, he contended this was simply spendthrift extravagance on the part of the Government.

"Let me criticise," he said, "not unduly I hope, the proposals contained in the Report of the Aircraft Insurance Committee as compared with our experience. The first matter in this Report is that—"

"In consideration of the companies placing their staffs at the disposal of the Government, we recommend that a remuneration of 10 per cent. on the gross premiums should be paid to the companies. . . ."

"At a later stage in addition to that there is 5 per cent. for agency purposes, so that the companies will get 15 per cent. on gross premiums. Now, what is our experience, because we have had ample experience upon this point? We have had to deal with claims of over £100,000—I mean that it is an experience over a wide margin; and our experience is that so far from the cost being 15 per cent., plus whatever the cost may be of a new State Insurance Office, ours has been just one-third per cent. In other words, the cost proposed in this scheme is forty-five times the cost according to the experience we have gained during the last seven months."

Truly when experts get to work there is no knowing where differences will crop out. Here we have a statement that the remuneration is forty-five times too much. *Per contra* a very strongly-worded letter has appeared in the Press from Mr. F. H. Haines, F.C.I.B., the managing director of a firm of insurance brokers of high standing, who claims that so far from the commission being forty-five times too great there is nothing left but bare bones after the miserable agent has finished his work. It would certainly appear from Mr. Haines' statement that the insurance offices and agents will assuredly be doing their "little bit" in working for the public's good. Let us hope, however, things are not quite so bad as he makes out in the following criticism of the Government scheme:—

"In insurance business we appreciate the fact that in every class of risk there are many individuals whose insurances are most desirable, whose risks are below the average, and whose premiums are needed to reduce the claim experience ratio. To bring this good business in to the companies the services of insurance agents and brokers are required. The insurance canvasser is employed to talk them over. Now, turning to the Government scheme, it is quite certain that outside of the districts subject to air raids there will be little or no 'voluntary' insurance, i.e., uncanvassed, unsolicited proposals. To remedy this obvious selection the services of the insurance community are urgently required to bring in a volume of business from other districts, so that the premium contributions may be distributed throughout the country. You will agree that this is so; but, to my amazement, those responsible for the scheme have only provided the inadequate remuneration of 5 per cent. commission to the men, brokers, and agents, who will have to do the real hard work of canvassing for proposals."

"Now, I say, this commission is a miserable pittance, totally insufficient, and not at all in accordance with the ordinary commission rates that obtain in the insurance business. Apparently the projectors of the scheme had in their mind the insurance of large mercantile risks, on which the rate of 5 per cent. commission might be adequate; but numerically considered the bulk of the fire insurance policies of this country are on small risks, and a commission of 5 per cent. on each individual war risk proposal is grossly insufficient."

"Let me state the following facts. In this district the average 'content' of private houses would be £250. The war risk premium thereon (aircraft) is 5s. Five per cent. commission on this amount is 3d. According to the instructions we have received from some companies, we are to send the money with the proposal, as it is a cash transaction. But a cheque or postal order for the amount named would cost 1d.; and the postage on one case would cost another 1d.; this leaves us with 1d. actual cash remuneration with which to meet wages, rent and all stationery charges. I have calculated out that on these terms, if the public were crowding to secure policies, at the end of the day I should have made a loss—assuming that the clerk did six cases per hour, which would be a fair average when one remembers how many explanations the public require on this class of business. You may say that the postage, &c., would not run into 1d. per case; but the Government scheme provides that a fire company cannot transact war business except with its fire clients, and so we may have as many companies to send to as we have proposals."

In spite of Mr. Haines' "frightful example," we fancy he has gone far astray in his views as to the fate of the Government measure when he concludes his letter with the hope that "someone in authority may wake up to the situation and take steps to lift the Government scheme out of the rut of failure in which at present it seems doomed to lie."

At least all the arguments of Lord Parmoor and those who supported him are emphatically in favour of our contention since last October, as to the comparatively small damage likely to eventuate from aircraft, and as to the large profits which must necessarily have accrued to the underwriters.

In the meantime matters are progressing well. Special efforts have been made by a number of the big insurance companies, some of which have issued special pamphlets upon the subject. Most of them greet the measure as one of considerable relief. One manager puts it as follows:—

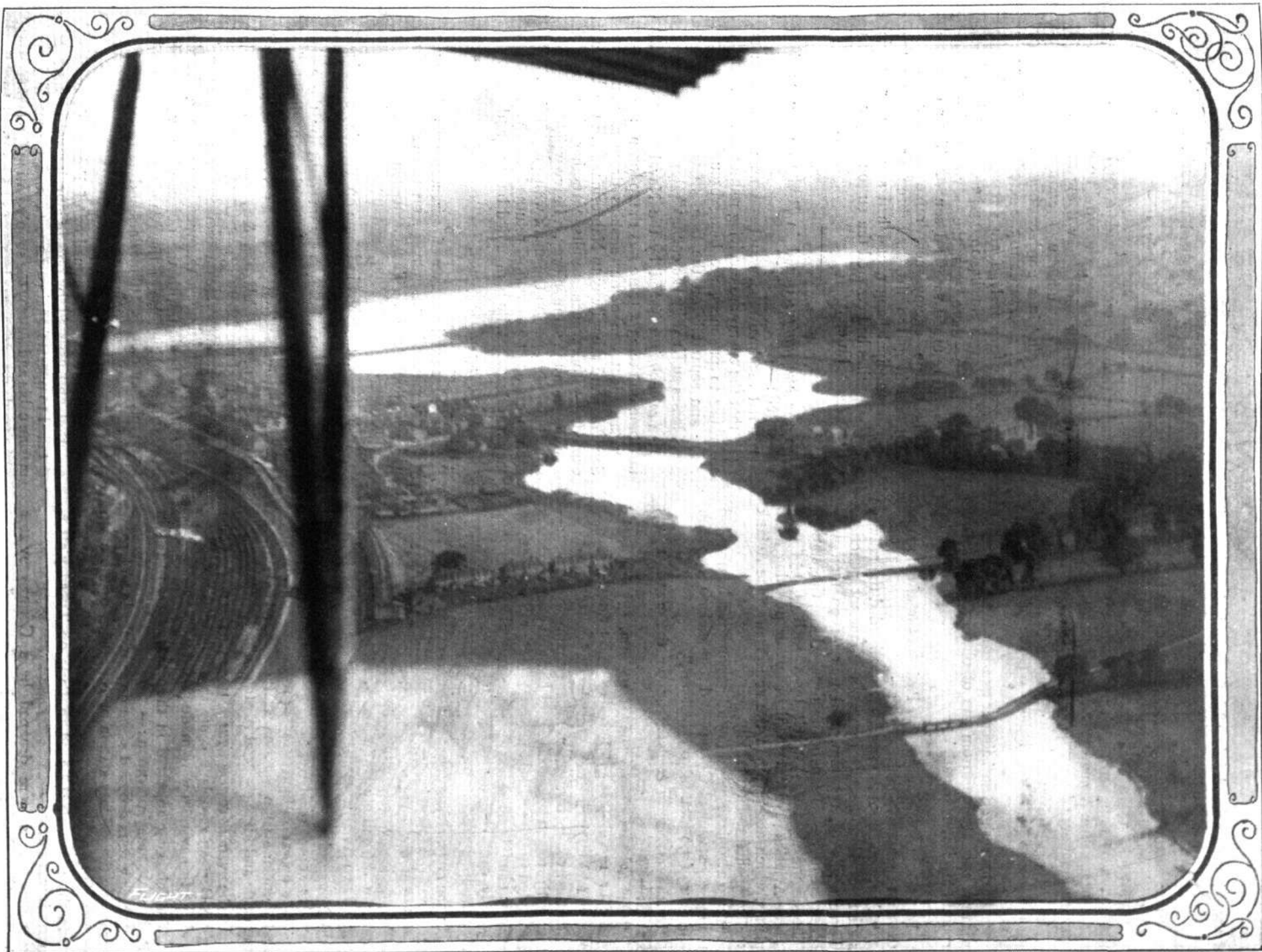
"At any rate, this scheme will simplify matters in one direction. We have been bombarded with proposals from clients respecting air-risk insurance for some months, and though many of us would not and could not accept the business, this new scheme will greatly simplify things after this rush is over, because instead of actually incurring expense without any direct return, our outlay will now be covered by the percentage allowed of the Government premium."

The Royal Insurance Company in their circular "regard the intervention of the Government as not only desirable, but necessary."

Taken all round, therefore, all concerned with this measure have cause to be genuinely satisfied.

JULY 30, 1915.

FLIGHT



THE WELSH HARP RESERVOIR IN FLOOD AFTER THE RECENT RAINS.—A snapshot from the Ruffy-Baumann biplane at a height of 1,000 ft.

AIRCRAFT WORK AT THE FRONT.

OFFICIAL INFORMATION.

In the despatch dated July 18th from an "Eye-witness" present with the British General Headquarters, there was the following:—

"The weather has been cold and changeable, and has, on the whole, been unfavourable to air work.

"On Friday there were two indecisive encounters in the air between our aeroplanes and hostile machines, one taking place near Armentières and the other to the south above Richebourg."

In the report from Sir Ian Hamilton dealing with the operations in Gallipoli, issued on the 22nd, it was stated:—

"On the 19th an anti-aircraft gun was located, and hit with the second round from one of our guns. The fifth round blew it into the air."

In the *communiqué* issued in Paris on the afternoon of the 21st there was the following:—

"Thirty-one aviators yesterday bombarded the railway station of Conflans, in Jarny, an important junction. Three shells of 155 mm. and four of 90 mm. were observed to have been neatly dropped on the station. The engine shed was struck by a shell of 155 mm. Three Aviatiks were put to flight by our pursuing aeroplanes, which accompanied the squadron. One Aviatik was compelled to land rapidly.

"Two aeroplanes yesterday afternoon again bombarded the railway station at Colmar, and four shells of 155 mm. and four of 90 mm. fell on the lines."

In the afternoon *communiqué* on the 22nd it was stated:—

"Our aviators dropped eight 90 mm. (3½ in.) shells and four 120 mm. (4¾ in.) shells on the railway station at Autry to the north-west of Binarville."

In the evening *communiqué* there was the following:—

"In the region of the Camp of Châlons enemy aviators attempted to bombard the villages and railway stations at which supply posts had been established. They were violently cannonaded. The incendiary bombs which they dropped caused no damage."

In the *communiqué* issued on the evening of the 23rd there was the following:—

"One of our flying squadrons employed on bombardment duties yesterday evening dropped twenty-eight shells on the railway station at Conflans-le-Jarnisy, and obliged two Aviatiks to alight in their lines."

A Navy order issued in Toulon on Sunday stated:—

"The French destroyer 'Bisson' has just carried out a brilliant operation by destroying the Austrian submarine and aeroplane supply station at Lagosta Island, cutting the cable and killing several Austrians."

In the evening *communiqué* of the 24th it was stated:—

"A German aeroplane came down near Bethancourt, and the two aviators were made prisoners."

The following appeared in the *communiqué* issued in Paris on Monday afternoon:—

"Our aviators dropped some 90 mm. shells and some arrows on the military station of Nantillois, to the north of Montfaucon."

In the *communiqué* issued in Paris on Tuesday afternoon it was stated:—

"Five bombs were dropped by a German aviator yesterday on Dunkirk, but caused no damage."

In an official review of the operations of the French Eastern Expeditionary Force during the period from June 25th to July 9th, issued in Paris, there was the following:—

"During the night of July 4th-5th the battle was begun. . . . Finally, aeroplanes of a grey colour marked with black crosses made several flights over our lines and dropped bombs, which did no harm. . . .

"At twilight our soldiers saw flying at a great height above their heads, a numerous squadron of Allied aeroplanes, proceeding in a north-easterly direction. They returned shortly afterwards to the aerodrome. Our men counted them anxiously, for a strong northerly breeze had risen, and was blowing in dangerous squalls. Ten, twelve, fifteen—there was the seventeenth—all the aviators had returned safe and sound. Their objective had been the enemy aerodrome at Chanak. A bomb weighing 150 lbs. had been dropped on the enemy's principal hangar, and had started a fire, while other projectiles had covered the surrounding camp with a shower of splinters.

In the *communiqué* issued in Rome on the 22nd it was stated:—

"Aerial reconnaissances and statements by prisoners show that the enemy are receiving reinforcements, which, according to prisoners, are being brought up in great haste and separately on the front to replace the very great losses suffered by the enemy."

In a *communiqué* issued by the Naval Chief of Staff in Rome on the 23rd there was the following:—

"Last night one of our airships dropped bombs on San Polaj and the railway to Nabresina. All the bombs exploded, with excellent results. Another air raid was also made on the same railway, a heavy weight of explosives being dropped on the mark with great effect. On each occasion the airships returned safely, although they had been heavily bombarded by guns and rifles."

In the *communiqué* issued in Rome on the 25th it was stated:—

"On the 23rd inst. two of our seaplanes flew over Riva, dropping 18 hand-grenades on the railway station with excellent results. The enemy's artillery fired on our machines without doing them any damage."

An official note issued in Rome on Tuesday stated:—

"At daybreak this morning two aeroplanes threw bombs on Ancona, but nobody was hurt by the aerial bombardment, and the damage caused was negligible."

In a *communiqué* from the Italian Naval Staff, dealing with the taking of Pelagosa, &c., issued on Monday, there appeared the following:—

"Naval operations were undertaken against the enemy's coast at the same time as that mentioned in the French report from Toulon, with the object of preventing the enemy from making use of the islands nearest our coast as supply stations for submarines and aeroplanes, or for the purpose of watching the movements of our warships. . . .

"At the same time a squadron of French destroyers, escorted and assisted by one of our light cruisers, was detailed to operate against Lagosta and to cut the submarine cable and destroy the supply station for submarines and aeroplanes which was known to be on this island."

THE BRITISH AIR SERVICES.

UNDER this heading are published each week the official announcements of appointments and promotions affecting the Royal Naval Air Service and the Royal Flying Corps (Military Wing) and Central Flying School. These notices are not duplicated. By way of instance, when an appointment to the Royal Naval Air Service is announced by the Admiralty it is published forthwith, but subsequently, when it appears in the LONDON GAZETTE, it is not repeated in this column.

Royal Naval Air Service.

THE following appeared among the Admiralty announcements of the 21st inst. :—

Temporary Sub-Lieut. (R.N.V.R.) E. G. L. Roberts promoted to temporary Lieutenant, with seniority of May 1st.

Entries have been made as follows: C. T. Freeman and A. J. Whetnall as Probationary Flight Sub-Lieutenants (for temporary service), with seniority of July 24th; R. E. Dean (Petty Officer) as Probationary Flight Sub-Lieutenant (for temporary service), with seniority of July 26th, and all appointed to "President," additional, for R.N.A.S.

Temporary commissions have been granted as under:

Lieutenants (R.N.V.R.): H. Jullerot, with seniority of May 27th; G. E. Stringer and J. B. Soames (temporary Second Lieutenant), with seniority of July 14th and 19th respectively, and all appointed to "President," additional, for R.N.A.S.

Sub-Lieutenants (R.N.V.R.): N. R. Fuller and D. S. Mason, with seniority of July 14th; and A. C. Marx (Chief Petty Officer), with seniority of July 20th, and all appointed to "President," additional, for R.N.A.S.

The following appeared among the Admiralty announcements of the 22nd inst. :—

Temporary Sub-Lieut. (R.N.V.R.) H. F. Melville promoted to temporary Lieutenant, with seniority of July 21st, and reappointed.

Chief Petty Officer (Mechanic) C. A. Schurre promoted to Warrant Officer (Second Grade), for temporary service, with seniority of July 21st, and appointed to "President," additional, for R.N.A.S.

The undermentioned have been entered as Probationary Flight Sub-Lieutenants, for temporary service, and all appointed to "President," additional, for R.N.A.S., with seniority as follows: F. R. Sudd, July 15th; E. M. Morgan, W. R. Mackenzie, C. Laurence, J. S. Browne, and M. J. Golding, July 19th; and M. Keith-Johnston, July 24th.

H. Mason granted a temporary commission as Lieutenant (R.N.V.R.), with seniority of July 21st, and appointed to "President," additional, for R.N.A.S.

The following appeared among the Admiralty announcements of the 23rd inst. :—

The undermentioned have been entered as Probationary Flight Sub-Lieutenants, for temporary service, and appointed to the "President," additional, for R.N.A.S., with seniority as follows: R. H. Nicholson, July 19th; S. G. Beare and G. W. R. Fane, July 22nd; J. A. Carr, C. B. Gasson, P. A. Johnston, and F. E. Sandford, July 26th; and N. Keeble, Aug. 2nd.

Temporary commissions (R.N.V.R.) have been granted to the following: E. Darrell-Huskinson, T. F. Norbury, and J. Gardiner, as Lieutenants, with seniority of July 22nd; and J. T. Saint (Chief Petty Officer), as Sub-Lieutenant, with seniority of July 21st, and all appointed to the "President," additional, for R.N.A.S.

The following appeared among the Admiralty announcements of the 24th inst. :—

Temporary Sub-Lieuts. (R.N.V.R.) E. B. Cowell and T. F. Le Mesurier as Probationary Flight Sub-Lieutenants, for temporary service, with seniority of July 23rd, and appointed to "President," additional, for R.N.A.S. (temporary commissions as Sub-Lieutenants, R.N.V.R., terminated).

B. F. M. Hughes and C. A. Eyre as Probationary Flight Sub-Lieutenants, for temporary service, with seniority of July 23rd; C. A. Rea (Chief Petty Officer) and F. D. Till (A.B., R.N.V.R.) both as Probationary Flight Sub-Lieutenants, for temporary service, with seniority of July 21st and 22nd respectively, and all appointed to "President," additional, for R.N.A.S.

L. A. S. Hansard granted temporary commission as Sub-Lieutenant (R.N.V.R.), with seniority of July 16th, and appointed to "President," additional.

The following appeared among the Admiralty announcements of the 26th inst. :—

Acting Commander H. T. A. Bosanquet to "President," additional, for R.N.A.S. July 24th.

The following appeared among the Admiralty announcements of the 27th inst. :—

Temporary Flight Lieut. R. E. Penny, transferred to the permanent list of the Royal Naval Air Service, with seniority of July 25th.

Temporary Sub-Lieut. (R.N.V.R.) Sir Arthur G. Hazelrigg, Bt., promoted to temporary Lieutenant, with seniority of July 23rd.

The following have been entered as Probationary Flight Sub-Lieutenants, for temporary service, with seniority as under: S. A. Turpin, July 22nd; F. N. Halsted (Mid-shipman, R.N.R.), July 26th; and A. P. Hadow, August 2nd, all appointed to "President," additional, for R.N.A.S.

Temporary commissions have been granted as follows: H. F. Seagram, H. E. Horne, A. W. Thompson, D. C. Waylen, and J. Neale, all as Lieutenants (R.N.V.R.), with seniority of July 26th, and appointed to "President," additional, for R.N.A.S.; and W. C. W. Ingle, as Sub-Lieutenant, with seniority of July 26th, and appointed to "President," additional.

Royal Flying Corps (Military Wing).

THE following appeared in a supplement to the LONDON GAZETTE issued on the 21st inst. :—

Supplementary to Regular Corps.—Vernon S. Brown to be Second Lieutenant (on probation). July 3rd, 1915.

The following appeared in a supplement to the LONDON GAZETTE issued on the 22nd inst. :—

Flying Officers.—Temporary Second Lieut. P. B. Brown, 8th (Service) Batt. South Staffordshire Regt., and to be transferred to the General List; June 30th, 1915. July 2nd, 1915: Capt. A. G. Moore, 4th Batt. (Extra Reserve) Manchester Regt., and to be seconded; Second Lieut. D. S. Jillings, Prince of Wales's Own (West Yorkshire Regt.); Second Lieut. S. T. Saunderson, North Irish Horse, Special Reserve, and to be seconded; Second Lieut. A. A. A. Knight, Royal Munster Fusiliers, from temporary Captain, 8th (Service) Batt., and to be seconded. July 9th, 1915.

The following appeared in the LONDON GAZETTE of the 23rd inst. :—

Flying Officers.—July 2nd, 1915: Lieut. A. Graves, Dorsetshire R.E., T.F.; temporary Lieut. W. D. Long, A.S.C.; Second Lieut. C. R. Rowden, Worcestershire Regt., and to be seconded; Second Lieut. A. C. Horsbrugh, Special Reserve; July 9th, 1915. July 10th, 1915: Second Lieut. G. P. A. Harvey, 3rd (Prince of Wales's) Dragoon Guards, and to be seconded; Lieut. J. H. Mansfield, 3rd Batt. (Reserve) King's (Shropshire L.I.), and to be seconded; Second Lieut. J. B. Robinson, Special Reserve.

Supplementary to Regular Corps.—Second Lieut. (on probation) William H. T. Rampling-Rose is confirmed in his rank, and to be Lieutenant. July 1st, 1915.

Second Lieut. (on probation) Alan C. Horsbrugh is confirmed in his rank. William C. Mortimer-Phelan to be Second Lieutenant (on probation). July 9th, 1915.

The following appeared in a supplement to the LONDON GAZETTE issued on the 24th inst. :—

Flight Commanders to be Squadron Commanders, and to be temporary Majors whilst so employed.—July 12th, 1915: Capt. Francis J. L. Cogan, R.A.; Capt. A. Ross-Hume, Cameronians (Scottish Rifles); Capt. Cyril F. De S. Murphy, Princess Charlotte of Wales's (Royal Berkshire Regt.).

Supplementary to Regular Corps.—Second Lieut. (on probation) Elliott I. Bingham is confirmed in his rank. To be Second Lieutenant's (on probation): John Latta; July 3rd, 1915. Robert Newman; July 9th, 1915. Stuart A. Laird; July 19th, 1915.

The following appeared in a supplement to the LONDON GAZETTE issued on the 26th inst. :—

Flight Commander.—Lieut. Charles C. Darley, R.A., from a Flying Officer, and to be temporary Captain whilst so employed. July 12th, 1915.

Supplementary to Regular Corps.—To be Second Lieutenants (on probation): Cedric W. Hill; July 3rd, 1915. Douglas A. Hansard; July 8th, 1915. Charles G. Tucker; July 26th, 1915.

The following appeared in the LONDON GAZETTE of the 27th inst. :

Flying Officers.—June 26th, 1915: Lieut. Hon. L. J. E. Twisleton-Wykeham-Fiennes, 4th Batt. (Territorial) Oxfordshire and Buckinghamshire L.I.; Lieut. R. T. Leather, Warwickshire Yeomanry, T.F.; Second Lieut. Walter H. Nixon, King's Own (Royal Lancaster Regt.), and to be seconded; June 30th, 1915. Temporary Second Lieut. H. S. Shield, 14th (Service) Batt. Durham L.I., and to be transferred to the General List; July 10th, 1915.

Supplementary to Regular Units or Corps.—Second Lieut. (on probation) George E. W. Humphery is confirmed in his rank.

Second Lieut. Albert Peter Thurston is as now described, and not as stated in the GAZETTE of July 8th, 1915.

Central Flying School.

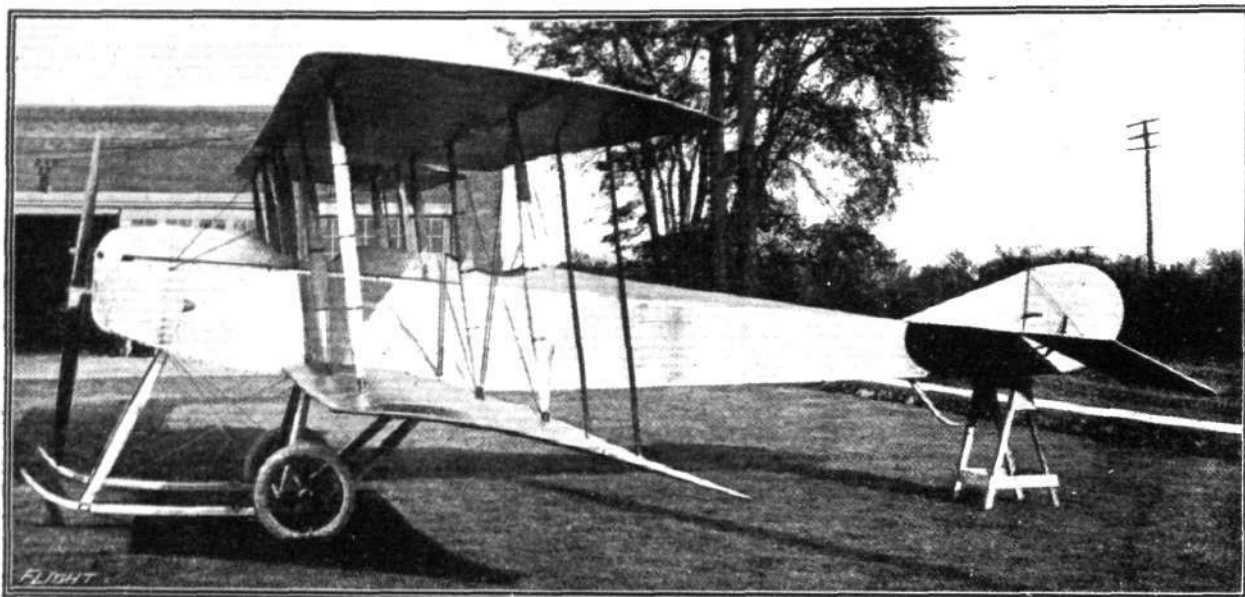
THE following appeared in the LONDON GAZETTE of the 23rd inst. :—

Instructor.—Lieut. (temporary Capt.) George F. Pretyma, D.S.O., Prince Albert's (Somerset L.I.), from a Flight-Commander, and to retain his temporary rank whilst so employed, vice Capt. H. Le M. Brock, Royal Warwickshire Regt. July 16th, 1915.

THE 90 H.P. MAYO MILITARY TRACTOR BIPLANE.

FOLLOWING the lead of the more important firms, most of the concerns, both old and new, building aeroplanes in the United States are turning their attention to military tractor biplanes, which, judging from their performances,

at Garden City Aerodrome, Long Island. On this latter occasion a speed of 78 miles per hour is said to have been attained, whilst the climbing powers of the machine were also remarkably good, in spite of the fact that the tractor



Side view of the 90 h.p. Mayo tractor biplane.

have demonstrated that our American cousins intend seriously to compete with European practice in this line. One of the most recent machines of this type to make its appearance is the Mayo biplane, designed by Chance

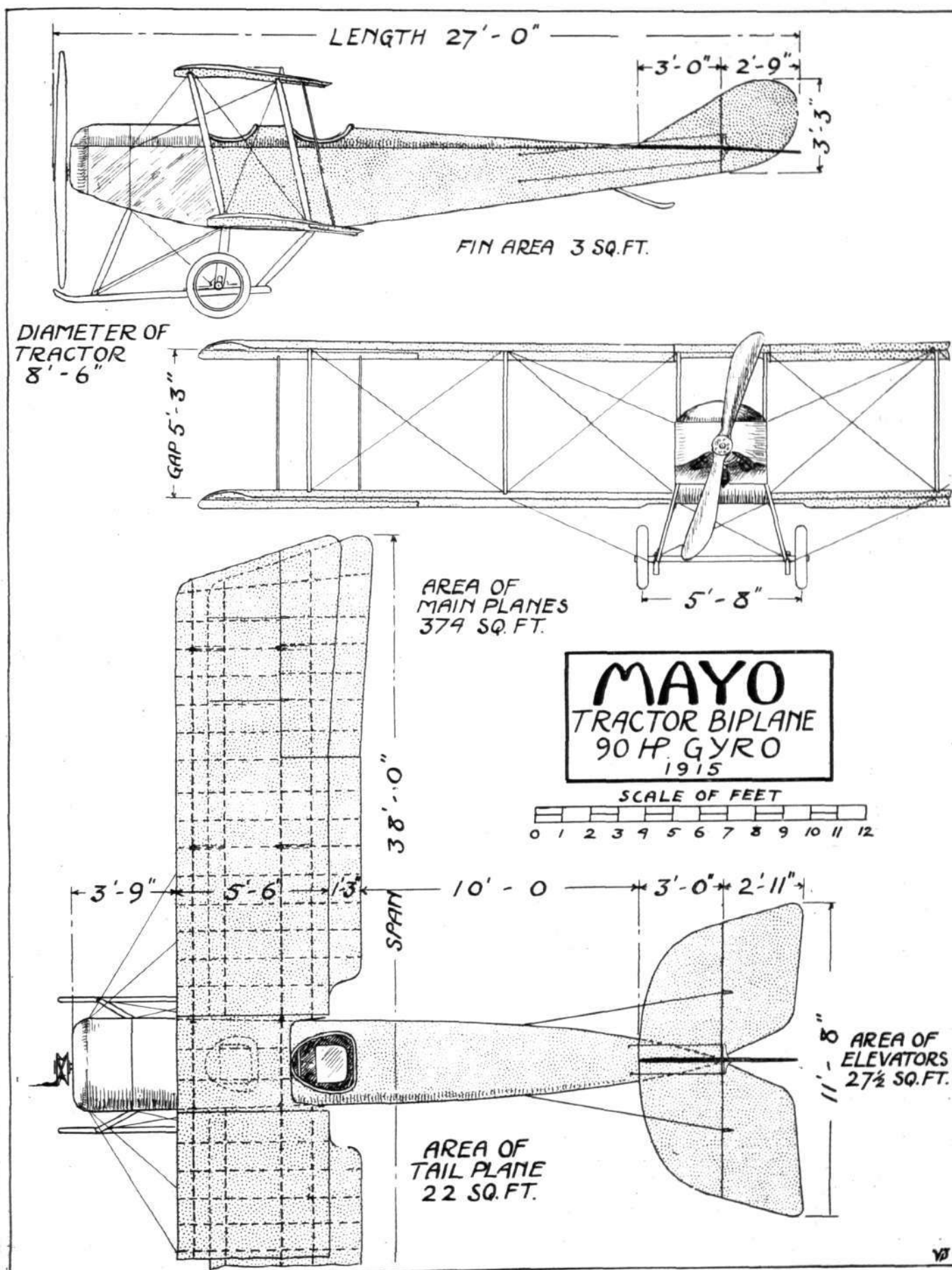
screw employed was not quite suitable. Simplicity and a minimum number of parts, quick assembling and dismantling, and other important requirements for military work, are features that have been studied in the design



The 90 h.p. Mayo tractor biplane in flight.

M. Vought, whose work is well known in the American aviation world. Its first trials, under the pilotage of Stevenson MacGordon, were made at Pratt Field, New-haven, Conn., and afterwards further trials were carried out

without sacrificing strength. In fact as regards the latter point, although the machine is certainly not on the heavy side, weighing empty 1,235 lbs., it comes out very well. A uniform factor of safety of 11 is employed throughout,



THE 90 H.P. MAYO TRACTOR BIPLANE.—Plan, side and front elevation to scale.

with the exception of members where big strains and wear obtain, in which case the factor of safety is proportionately increased. Oversize wire cross bracings are also employed in order to minimise excessive elongation, causing mal-adjustment, and the consequent need for frequent adjustment. Another feature that makes for strength is that in no case is a compression or load member pierced by bolts or pins, and none of the metal parts are welded. In short, the makers claim in their machine a high standard of workmanship and the best of materials—raw and finished materials for the first machine were tested in the laboratories of the Sheffield Scientific School, Yale University.

The upper and lower planes are of equal span, 38 ft., and are made up of four similar units and a small central panel mounted above the body by four struts, to which the two upper plane portions are attached. The lower plane units are attached to the bottom longitudinals of the body by means of four quick detachable heavy nickel steel pins. The inter-plane struts (four pairs) and bracing cables are anchored in quick detachable fittings with chrome nickel steel pins provided with safety chains. Both top and bottom planes are set at a slight dihedral angle, and the top plane is staggered forward 1 ft. 3 ins. in advance of the other. To improve the pilot's view above and below, portions of the planes are cut away in the top central panel and in the lower plane on either side of the body respectively. The main spars are of ash, and are of ample proportions. The front ones are situated some 6 ins. from the leading edge, whilst the rear spar is nearly 2 ft. from the trailing edge. The ribs, which are spaced about 1 ft. apart, are rigidly attached to the spars and only carry load stresses. A system of internal struts and wire cross bracing serves to take all compression strains. The wing section employed has been designed to give large lift combined with a wide speed range. Balancing flaps are hinged to the rear spars of both top and bottom planes, and the cables operating them are concealed within the planes. The gap between the flaps and the planes has been reduced to a minimum, so that there is little, if any, drag

and loss of efficiency thereby. High grade linen, doped with Gallaudet varnish, is employed in the covering of the planes and other surfaces. The tail consists of a fixed non-lifting surface, semi-circular in shape, to the trailing edge of which are hinged two elevator flaps, in between which is a vertical rudder. Forward of the latter is a vertical triangular fin. All these members, which are constructed of heavy gauge steel tubing, are secured to the body by a neat and safe arrangement, whereby they can be removed therefrom merely by withdrawing three bolts.

The body presents a very good streamline, being rectangular in section, tapering to a vertical knife-edge at the rear, and having a turtle deck. It is built up in two sections, of ash longitudinals and struts in the forward portion and spruce in the rear, the whole frame being well braced with heavy gauge wire, whilst the joints are all connected by means of specially-designed steel fittings, which obviate the necessity of piercing the longitudinals. The 7-cylinder 90 h.p. Gyro engine is mounted on two steel beds rigidly secured to the longitudinals in the nose, and is partially enclosed by an aluminium cowl. Immediately behind the engine are the fuel tanks, having a capacity for four hours' flight, and behind these are the passengers' and pilot's cockpits respectively. Forward of the cockpits the body is covered with sheet aluminium, the remainder being covered with fabric. The seats are provided with an arrangement for quickly adjusting their height. The Deperdussin type of control is fitted—a vertical wheel for lateral balance on a rocking column actuating the elevator, and a foot-operated rudder bar. The under-carriage consists of two ash skids connected to the body by three pairs of hollowed struts, and a tubular axle, sprung from the skids, carrying a pair of 26 in. by 4 in. wheels.

The principal dimensions of the Mayo tractor biplane are: Span, 38 ft.; chord, 5 ft. 6 ins.; gap, 5 ft. 3 ins.; supporting area, 374 sq. ft.; overall length, 27 ft.; weight, empty, 1,235 lbs.; speed, 43 to 80 miles per hour, with a landing speed of 36 m.p.h.

ROYAL AERO CLUB OF THE U.K.

OFFICIAL NOTICES TO MEMBERS.

Aviators' Certificates.

THE following Aviators' Certificates have been granted:—

- 1445 2nd Lieut. Leonard Arthur Tilney (Duke of Lancaster's Own Yeomanry) (Maurice Farman Biplane, Military School, Farnborough). March 2nd, 1915.
- 1446 2nd Lieut. Samuel Traherne Saunderson (Irish Horse) (Maurice Farman Biplane, Military School, Farnborough). April 24th, 1915.
- 1447 John Cotesworth Slessor (Maurice Farman Biplane, Military School, Brooklands). July 6th, 1915.
- 1448 Exley Livingston Millar (Maurice Farman Biplane, Military School, Brooklands). July 15th, 1915.
- 1449 2nd Lieut. John Ashworth Barraclough (Maurice Farman Biplane, Military School, Farnborough). July 18th, 1915.
- 1450 Flight Sub-Lieut. William Lionel Graham, R.N.A.S. (Maurice Farman Biplane, Royal Naval Air Station, Chingford). July 19th, 1915.
- 1451 Lieut. George Lindores Wightman (Gordon Highlanders) (Maurice Farman Biplane, British Flying School, Le Crotoy, France). July 19th, 1915.
- 1452 Sergt. Alexander Patterson, R.F.C. (Maurice Farman Biplane, British Flying School, Le Crotoy, France). July 19th, 1915.
- 1453 Norman George McNaughton (Maurice Farman Biplane, Military School, Brooklands). July 21st, 1915.
- 1454 Richard Yates (Maurice Farman Biplane, Military School, Brooklands). July 21st, 1915.
- 1455 Flight Sub-Lieut. Henry Connell Vereker, R.N.A.S. (Maurice Farman Biplane, Royal Naval Air Station, Chingford). July 21st, 1915.

- 1456 2nd Lieut. Richard Spencer Lucy (2/7 Worcestershire Regt.), (Maurice Farman Biplane, Military School, Birmingham). July 21st, 1915.

- 1457 2nd Lieut. Eric Roby Vaisey (Essex Regt.) (Maurice Farman Biplane, Military School, Farnborough). May 21st, 1915.

THE FLYING SERVICES FUND

administered by

THE ROYAL AERO CLUB.

THE Flying Services Fund has been instituted by the Royal Aero Club for the benefit of officers and men of the Royal Naval Air Service and the Royal Flying Corps who are incapacitated on active service, and for the widows and dependants of those who are killed.

The Fund is intended for the benefit of all ranks, but especially for petty officers, non-commissioned officers and men.

Forms of application for assistance can be obtained from the Royal Aero Club, 166, Piccadilly, London, W.

Subscriptions.		£	s.	d.	
Total subscriptions received to July 21st, 1915...		9,393	10	11	
Committee of the Ceylon Planters' One Day's Pay Fund			4	0	0
Miss Dorothy Pennington (Second contribution)			0	10	6
Total, July 28th, 1915		9,398	1	5	
166, Piccadilly, W. B. STEVENSON, Assistant Secretary.					

FROM THE BRITISH FLYING GROUNDS.

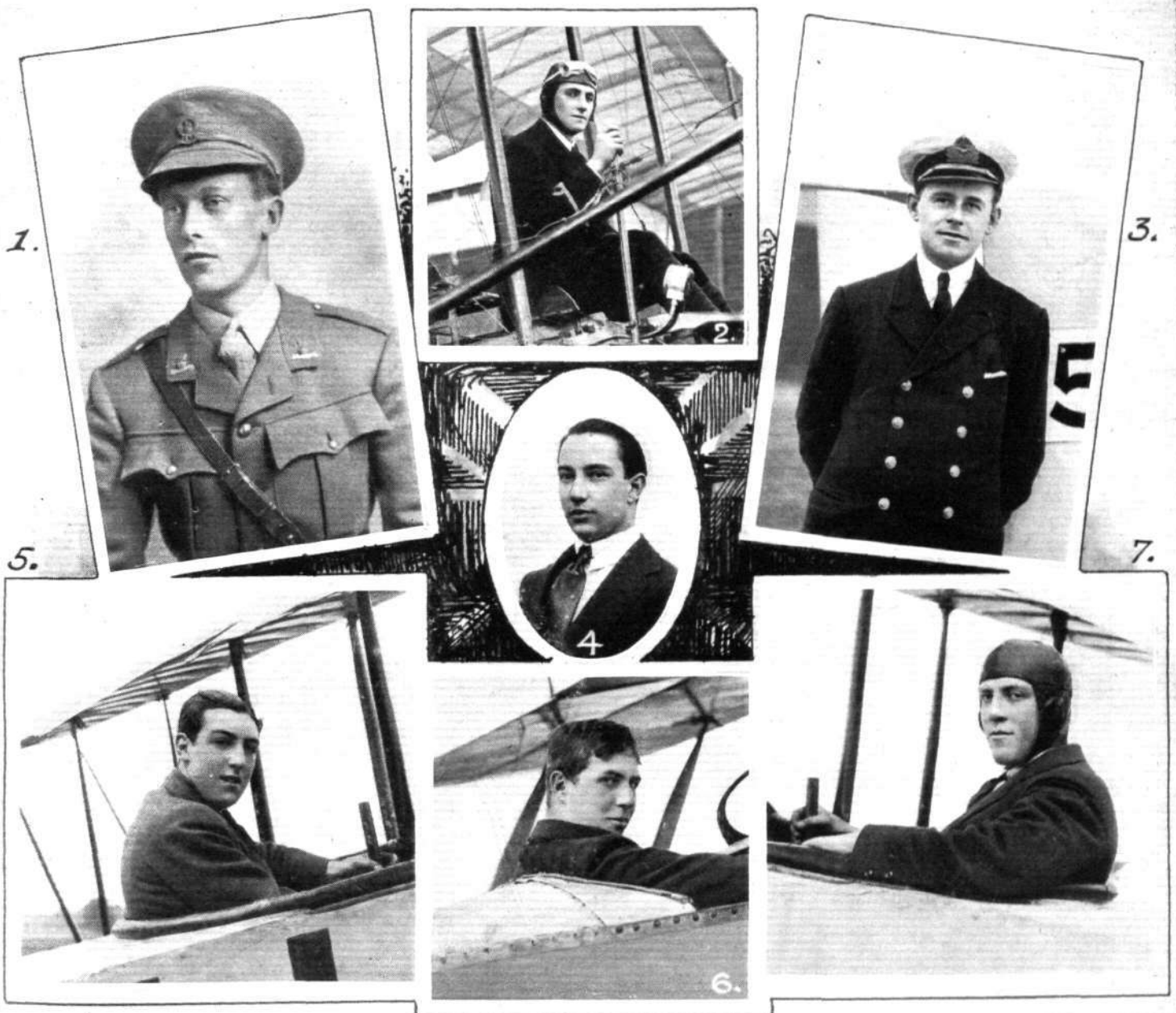
London Aerodrome, Collindale Avenue, Hendon.

Grahame-White School.—Last week, doing straights with instructor: Probationary Flight Sub-Lieuts. Barrington, Blake, Clifford, Dallas, Douglas, James, Perham, and Murray. Straights alone: Probationary Flight Sub-Lieuts. Hume, Sievking, and Douglas. Circuits: Probationary Flight Sub-Lieuts. Pearson and Wyllie. *Brevet* during week: Probationary Flight Sub-Lieut. Wyllie. Took excellent ticket.

Instructors: Messrs. Manton, Russell and Winter.

Beatty School.—The following pupils were out during the week:—On Beatty-Wright machines, accompanied by instructors: Messrs. Arbon (4 mins.), Banks (15),

Bond (30), Eaton (50), FitzHerbert (36), Fox (8), Jones (15), King (37), Robb (6), Ross (15), Sampson (35), Tomlinson (70), Vickers (10), Savile-Onley (10), Dickenson (45). On Caudron machines: Messrs. Coates (5), Collett (15), Fawcett (15), Goodfellow (10), Litton (10), Nicholson (20), Rutherford (5), Smith (23), Spicer (15), Thompson (25), Tolhurst 23, Whincup (5), Willmet (10), Stag (15), Middleton (10), Broadbent (10), Fellowes (20), Cox (30), Jones (40), Kirkwood (15), Arter (35), Greenhill (25), Tremlett (10), Owen (10). The instructors were Messrs. G. W. Beatty, W. Rochekelly, C. B. Prodger, and A. E. Mitchell, the machines in use being Beatty-Wright dual control and single-seater



SOME PILOTS WHO HAVE RECENTLY TAKEN THEIR ROYAL AERO CLUB CERTIFICATES.—1. 2nd Lieut. A. D. de Broughton (14th Reserve Cavalry), Ruffy-Baumann School, June 1st. 2. Flight Sub-Lieut. C. C. R. Edwards, R.N.A.S., R.N. Air Station, Chingford, June 29th. 3. Flight Sub-Lieut. E. A. de L. de Ville, Grahame-White School, May 29th. 4. Mr. T. D. Cole, Ruffy-Baumann School, July 1st. 5. Mr. L. Minot, Hall School, July 8th. Mr. Minot is an old Dulwich School boy who joined during his holidays and secured his ticket. 6. Flight Sub-Lieut. E. Cadbury, R.N.A.S., Grahame-White School, June 19th. 7. Mr. E. J. Furlong, Hall School, July 12th, another school boy (Mill Hill) who started his tuition during holidays.

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propeller biplanes and Caudron tractors. Extra practice was taken by Messrs. Kenworthy and Chave.

Exhibition flights were given on Sunday, and several passenger flights were taken.

Hall School.—The following pupils received instruction during the week ending July 17th:—

With Mr. Stevens: Lieut. Raymond-Barker (30 mins.), Mr. Snowdon (57), Mr. Booker (26), Mr. Mason (45) and Lieut. Phillpotts (50). With Instructors Cecil M. Hill and H. H. James: Messrs. Hamer (13), Bell (57), Yonge (20), Gordon (38), Gay (15), Hatchman (32), Russell (7), Bangs (22), Wilkins (20), Huggan (12), Goodrich (12), Millbourne (3), Punnett (10), Wenner (8), Watson (12), Furlong and Lieut. Jowett (22).

Mr. Minot, who took his certificate at this school, is taking extra practice while awaiting appointment to the R.F.C.

R.A.C. Certificates were taken by Mr. J. Furlong and Lieut. Raymond-Barker. Lieut. Raymond-Barker took his certificate in a satisfactory manner under very adverse weather conditions on his last day of leave, thus enabling him to transfer to the R.F.C. Mr. Furlong is still at school, and had to obtain the Head's permission for time off for practice.

The following pupils showed satisfactory progress: Messrs. Booker, Snowdon, Lieut. Phillpotts and Mr. Gay.

Will Lieut. Grant, who took his certificate at the Hall School last week, kindly communicate with the Manager at once?

During the week ending July 25th, thunderstorms and showery weather made practice difficult. However, good work was got in during the intervals of fine weather. With Instructor H. F. Stevens: Messrs. Snowdon (9 circuits), Booker (3 circuits). With Instructor C. M. Hill: Messrs. Gordon (42 mins.), Gay (48), Snowdon (6),

Lieut. Phillpotts (54), Bell (18), Hatchman (32), Lieut. Jowett (20), Booker (18), Russell (5), all doing straights and half circuits. With Instructor James: Messrs. Yonge (24 mins.), Bangs (32), Huggan (23), Watson (23), Wilkins (27), Millbourne (48), Bayley (6), Goodrich (22), Cook (5), Wenner (6), all doing straight flights and half circuits. Pupils now practically ready for certificates: Messrs. Snowdon and Booker. Machines in use: Hall tractor (Government type) biplanes.

London and Provincial Aviation Co.—Pupils doing rolling last week: Messrs. Chapman, Welsford, Burton, May, and Frost. Straights: Messrs. Sykes, Everidge, Sargood, Jacques, and Blackburne-Maze. Circuits and eights: Messrs. Adams and Gunner. Instructors: Messrs. M. G. Smiles, W. T. Warren and James.

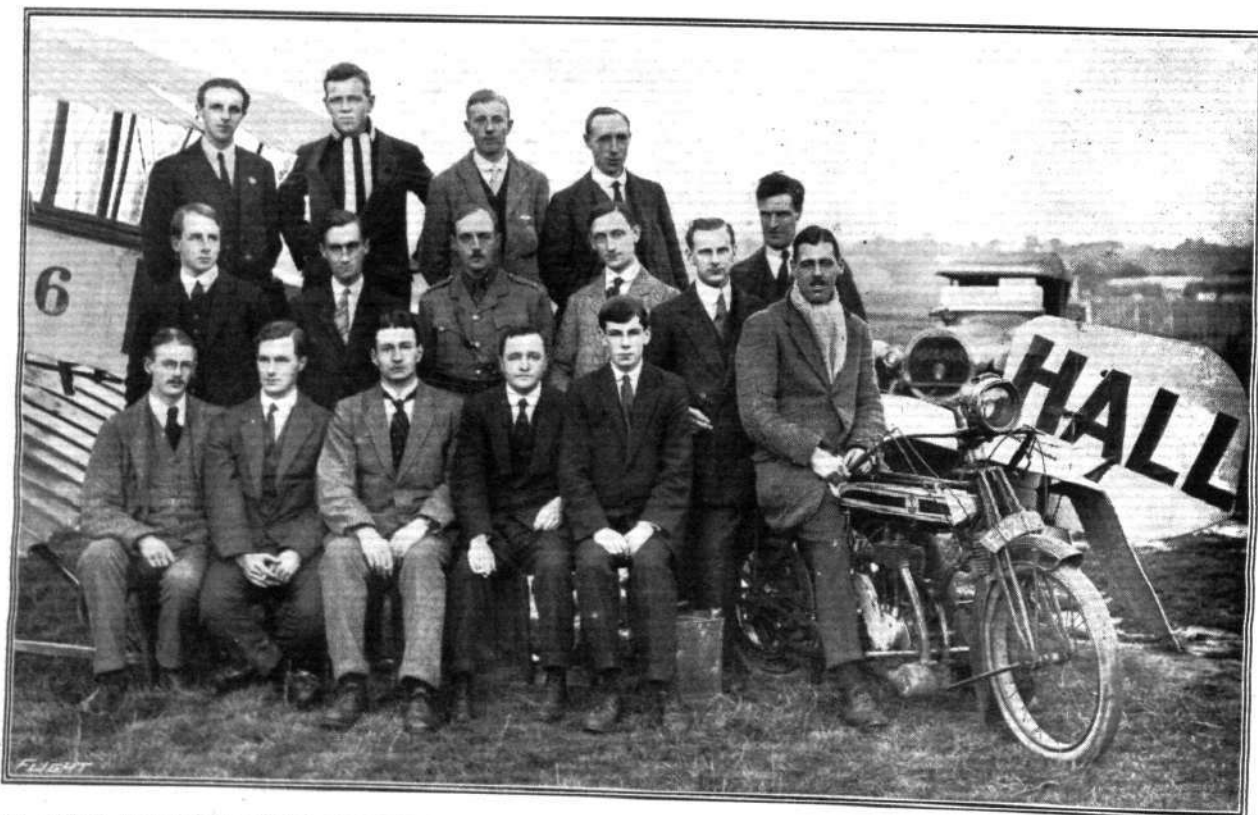
On the 24th inst. Mr. Barton Adams took his certificate in good style, and on the 25th inst. Mr. E. Redgrave Gunner passed for his *brevet*, making a good, steady flight.

Ruffy - Baumann School.—In spite of the very inclement weather there has been comparatively a good amount of school work accomplished by many pupils. The following have been out on the 60 h.p. Ruffy-Baumann biplane:—Wallis (58 mins.), Mathewson (32), Dixon (58), Wilson (18), May (10), Railton (36), Ovens (20), Belton (20). The 50 h.p. Ruffy-Baumann biplane and the 50 h.p. Caudron-type biplane have been piloted by the following pupils:—Sykes (46), England (42), Dixon (46), Fenning (10), Boisson (2), Wallis (46), Liddell (30), FitzSymons (38).

Mr. Sykes went for his ticket on Sunday morning, and passed quite successfully.

Many passenger and exhibition flights have been made by the school pilots during the week.

Instructors: Baumann, Ruffy, Virgilio and Winchester.



AT THE HALL FLYING SCHOOL, HENDON. SOME PUPILS AND INSTRUCTORS.—Reading from left to right, top row: Messrs. H. H. James (instructor), F. E. Goodrich, J. A. Yonge, C. M. Hill (instructor), H. F. Stevens (instructor). Second row: Messrs. P. Snowdon, P. Bayley, Lieut. Jowett, E. Wilkins. Front row: Messrs. C. Cook, E. A. Gay, J. L. Hall, A. E. Hatchman, J. D. Booker, B. Francis (manager), Lieut. J. R. Phillpotts.

Midland Flying School, Birmingham.

THE Midland Flying School at Billesley Common, Kingsheath, Birmingham, under the supervision of Mr. S. Summerfield, commenced operations on July 23rd. Mr. Monfie doing straights, and Messrs. John Trysing, C. Cheung, S. K. Lee, all 15 mins. with instructor, rolling. July 24th, Mr. Monfie doing straights; unfortunately on landing he collided with the fencing, smashing the propeller and slightly damaging the machine. This was quickly repaired and made ready for school work next day. July 25th, wet and windy, no pupils out. July 26th, C. Cheung, J. Munlon, K. N. Chan, with instructor on straight. S. K. Lee rolling and afterwards doing straights. July 27th, C. Cheung rolling,

FLYING AT HENDON.

ON Monday, Tuesday and Wednesday of last week the Mann twin pusher biplane was out again for further trials, piloted by W. Rowland Ding, the previous Sunday's engine trouble having been located. Slowly but surely improvement is taking place in the flying of this machine. On these last occasions the speed had been increased to over 80 m.p.h., whilst the climbing powers have also improved. At present, trouble is being experienced with the petrol feed, but this will probably be remedied by the coming week-end, and with the addition of new Chauvière propellers further trials with, it is hoped, even better results will be made.

Last Saturday opened with one of the heaviest rainstorms that has been seen at Hendon for some time, and it was not until nearly 4 o'clock that it cleared sufficiently for flying to take place. M. Osipenko started off with three flights on the 50 h.p. G.-W. school 'bus, and then E. Baumann ascended on the 60 h.p. Ruffy-Baumann biplane. The next up was Marcus D. Manton, with a passenger, on the 50 h.p. G.-W. 'bus, and then one of

but owing to unfavourable weather the work could not be continued. Machine in use is 50 h.p. type Blériot; a similar machine is also being erected.

Northern Aircraft Co., Ltd.

The Seaplane School, Windermere.—Monday last week a gale; Tuesday, Wednesday, Thursday, Friday and Saturday, high winds and rain, which retarded school work considerably. Some work, however, was got through with Instructors Messrs. W. Rowland Ding and J. Lankester Parker, including Benson (16 mins.), Barber (28), Buck (10), Inglis (15), Sibley (15), Macintyre (18), Macaskie (20), Lawton (19).

Machine in use: N.A.C. 50 h.p. Gnome, propeller biplane.

the relics of bygone days made its appearance, somewhat altered in appearance, but flying as well as ever—the 100 h.p. Deperdussin monoplane. A monoplane is such an unusual sight at Hendon now that there was a certain amount of excitement amongst many of the spectators. Further flights, with passengers, were then made by Osipenko on the 50 h.p. G.-W. 'bus, and Baumann on the 60 h.p. R.-B. biplane, whilst three more pilots got going, J. L. Hall on his 45 h.p. Caudron, G. Virgilio on the 50 h.p. R.-B. biplane, and W. Roche-Kelly on the 50 h.p. Beatty-Wright biplane. One of the new Curtiss tractor biplanes was also very much in evidence during the afternoon, whilst there was an aerial visitor in the form of a Tri-colour Maurice Farman "short-horn."

On Sunday the weather was just as bad, but in spite of this there was even more flying than on the previous afternoon. The G.-W. stud was as busy as ever on the school 'buses, and M. Osipenko also had the 100 h.p. five-seater out. Another pilot out was C. B. Prodder on the 40 h.p. Beatty-Wright.

Three Aeroplanes from Newfoundland.

ACCORDING to a report from St. John's, Newfoundland, a fortnight's campaign has resulted in the raising of £5,000 for the purchase of two aeroplanes for Imperial service, and the brothers Reid, railway contractors, will provide a third. The formal presentation is to be made on August 4th, the anniversary of the declaration of war.

Two from Bombay.

IT is also announced that Sir Sassoon David and Sir Shapurji Broacha, on behalf of the City of Bombay, have presented the Government with two fully-equipped aeroplanes.

And Another from Rhodesia.

FROM Salisbury, S. Rhodesia, comes a message, stating that the Administrator has cabled a draft of £1,500 to the Imperial Government for the Rhodesian Aeroplane Fund for the purchase of

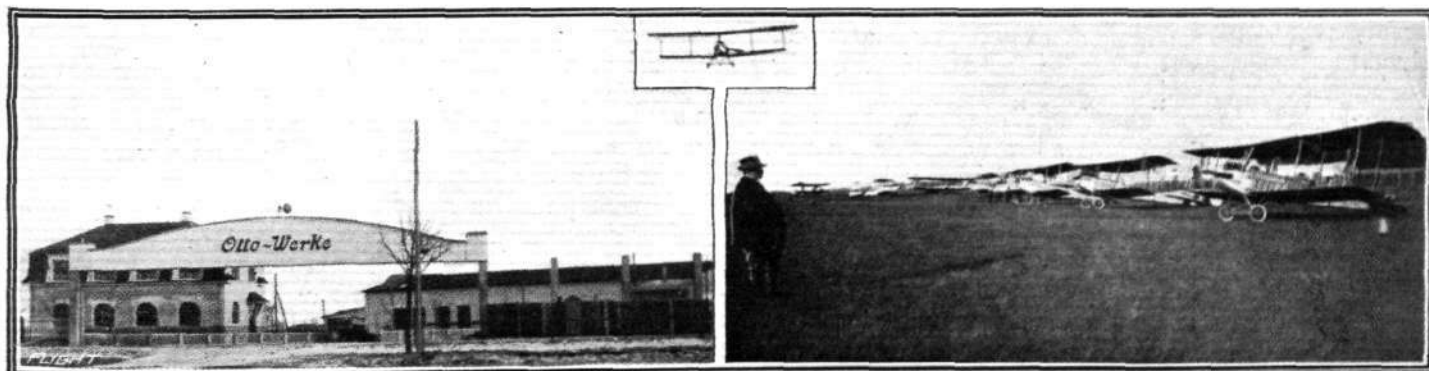
an aeroplane as Rhodesia's first gift to the Royal Flying Corps, to form a Rhodesian unit of the Imperial air flotilla.

London's Anti-Aircraft Corps.

REPLYING to Mr. King in the House of Commons on Monday, Mr. Tennant, Under-Secretary for War, stated that no decision had yet been reached in the matter of the Anti-Aircraft, London, Corps passing under the control of the War Office.

Remodelling Zeppelins.

IN a message from New York, a TIMES correspondent states that Countess Von Dagenfeld, a niece of Count Zeppelin, who lives with her husband, an American citizen named Apel, at Ventnor Heights, New Jersey, has said that most of the German airships have been temporarily withdrawn from service for the purpose of being remodelled. According to her latest information they will come out with the German fleet about October 1st. Soon after that the whole world will be crying for peace.



THE OTTO AIRCRAFT WORKS AT MUNICH.—On left the works, and on right a row of Otto biplanes ready for delivery. The person in the foreground is alleged to be the chief pilot and tester, and has possibly been so placed as suggestive of the lifting power of the Otto machines.

EDDIES.

CHATTING to a pilot the other day, conversation not unnaturally got focussed on the work of our Air Services, which my friend, although not connected with any of these, has had exceptional opportunities to follow at close range. I gathered pretty firmly that the praise so repeatedly bestowed upon our Royal Flying Corps in Sir John French's despatches is in sympathy with the feeling of all branches of the Services. There is but one view of the courage and resourcefulness of both pilots and observers, and that is unalloyed admiration. So far from being a rare occurrence, the sight of a machine returning from a reconnaissance with anything from five to a score of holes in the wings and fuselage is almost an everyday affair. If, in addition, some vital part has been damaged, a new pair of wings is fitted, and by next day the machine is away again as if nothing had happened. At first there was quite a race for the honour of having the greatest number of holes in one's wings; but now it has become such a commonplace occurrence as to excite little comment except from members of the younger generation, as it were, who have but recently undergone their baptism of fire. It is told of one youthful pilot that he was so pleased with his first success in bringing down a German machine, that, after landing, he would stop every ten yards or so on his way to quarters and draw diagrams in the mud of how he had accomplished it.

x x x

Whether there really is some truth in the rumours regarding the latest German Zeppelins and their speed and climbing powers it is of course difficult to say, but while discussing the question a few days ago with one of our pilots, he mentioned that on one occasion a Zeppelin was sighted, and in a few minutes' time, as he put it, "all the aeroplanes in France and Flanders were after it." While this is probably not strictly accurate it seems that a goodly number of our machines did give chase, forming an elongated trail behind the Zep. After something like an hour's pursuit the slower machines had been left behind, and the pilots of the fastest to their astonishment could see that the distance so far from decreasing had very considerably increased, and as there was by this time several miles of sea between them and land they reluctantly turned about and gave up the chase. From this it would certainly seem that by some means or other the Germans have succeeded in bettering the speed of their gas-bags either by piling on more power or by giving them a better stream-line form. At any rate one would imagine that there could not have been among the pursuers any Avros, Bristol, Sopwith, or Martinsyde scouts, as it seems incredible that one of these fast craft should be incapable of overtaking a bulky airship.

x x x

A propos speedy machines, the new little Nieuport tractor biplane that was described in our columns some considerable time ago, when it was first brought out in fact, so far as I can learn is getting itself thoroughly liked by all who have had a chance of trying it. It is said to be exceptionally easy to handle for a little fast 'bus, and the arrangement of allowing the gunner to stand up in his seat and fire out over the propeller is apparently proving quite successful. Like all scouts, they are, I believe, a little tricky to land, and one pilot is said not to have acquired the "knack" until he had success-

fully "piled up" two machines. However, once acquired they are particularly suitable, as the little lower plane is scarcely more than a visiting card, and does not therefore obstruct the view to any extent.

x x x

Of other of the newer types of French machines the twin-engined Caudron is rapidly getting into favour with the Flying Services for its speed and climbing power. As to actual figures regarding these accomplishments, just now these perhaps are best left to the imagination, but you can accept my word for their excellence.

x x x

Looking in at Hendon late on Wednesday afternoon, when, in view of the stiff breeze which was keeping the flags on top of the hangars fully extended, it was hardly to be expected that any machines would be out, I found a couple of the latest Curtiss tractors disporting themselves in the "central blue," and giving a very fine account of their qualities under very bumpy conditions.

x x x

Mention was made in "Eddies" last week of the establishment of various branches of German aircraft factories in Austria. Among these are, as readers will



The Austrian Albatros aircraft works.

remember, the Albatros works, of which the accompanying illustration, since to hand, will give a good idea. Judging from the external appearance of these works, the Austrian branch is of generous proportions, and looks capable of, from the enemy's point of view, a highly satisfactory output.

x x x

In FLUGSPORT of June 16th there appears an account of how a French aeroplane was brought down by German artillery near Douai. The writer, whose name is given as W. Scheuermann, is, as far as I can make out, the official German War correspondent. After describing how the French pilot attempted to dodge the shells by sharp turns, drives and switchbacks, he being ultimately hit and forced to come down in a very steep glide, the correspondent continues: "As soon as it was ascertained that the hostile machine had been hit two motor cars started in pursuit. The machine had landed close to a little village, and as the first motor arrived at the landing place, manned by a captain and a lieutenant, it was found that a field gendarme had already made the two aviators prisoners, and was attempting to put out the fire. As was their duty, the French aviators had set fire to their machine on landing, but this was soon extinguished."

"The two prisoners were an officer in a Dragoon regiment and a corporal. The officer, who was the son of a well-known politician, was very depressed over his misfortune, but when he saw how politely the German officers greeted him he somewhat recovered. When jokingly asked what reports he had to make, the Frenchman bowed and replied with a somewhat pained smile: 'Gentlemen, a German pilot who landed inside our lines gave our General who tried to question him, the following proud answer: "Monsieur le General, in my place you would not have said a word. Allow me the same privilege." Therefore, gentlemen, accord to me also a similar privilege.'

x x x

"Needless to say the prisoners were treated with all the respect to which a brave adversary is entitled. The next German aeroplane to fly over the French lines dropped a letter stating that Lieut. — and Corporal — had been forced by artillery fire to land, and were unwounded and German prisoners of war."

x x x

From a correspondent in Holland I have received a long letter, in which, among other things, he says: "When looking through FLUGSPORT of July 14th my attention was attracted by two pictures which had for their titles 'The latest English Seaplanes.' On closer examination I found that one was an Avro tractor biplane and the other the N.A.C. monoplane. Under the picture of the latter I found 'Pusher Eindecker.' Evidently the writer was under the impression that this plane was built by a certain Mr. Pusher instead of Mr. Ding, although he would certainly deserve this name, as he pushes things rather well up at Bowness-on-Windermere."

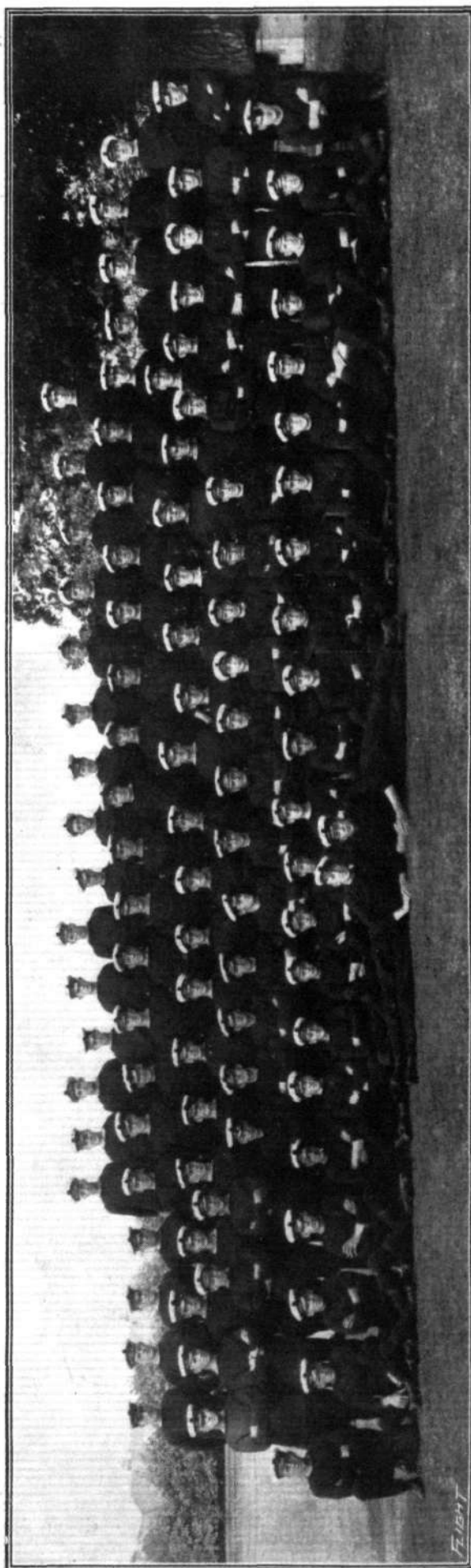
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"At the Johannisthal aerodrome near Berlin," my Dutch correspondent continues, "was witnessed a fall of 2,000 metres without the pilot getting hurt or the machine smashed. One of the pilots, who not so very long ago had obtained his certificate, was going to put a new machine—Fokker monoplane—through its trials. After having made a few rounds, he began to climb. The light fast machine climbed magnificently, and in a very short time a height of 2,000 metres was reached. The pilot, not used to so fast a machine, pushed the control lever too hard so that the plane turned completely over and fell with the chassis upwards. The pilot did not lose his presence of mind and tried to right the plane. He succeeded in doing this, but pulling the control lever too hard again, he completely looped the loop, falling in the meantime at a terrific speed. On the aerodrome, people who were witnessing this terrible fall expected every minute to see machine and man smashed. At about 100 metres from the ground the machine made a last loop, and landed easily without even damaging the landing chassis. The pilot, when he was on the ground again, was swearing badly, saying that he never wanted to fly such a miserable machine any more."

x x x

"Well," comments my correspondent, "I cannot understand why the Kultur people try to fly French machines, when their own types are much better, especially the monoplanes. They won't climb 1,000 metres in 4 minutes; 8 minutes is fast enough for them. Besides, such rash movements are very bad for the stomach, especially after a good dinner of Sauerkraut mit Wurst."

"ÆOLUS."



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No. 6 Section, Kite-Balloon Service, R.N.A.S., at Southampton.

The Roll of Honour.

THE following casualties in the Expeditionary Force have been officially reported from General Headquarters:

Under date July 6th:

Died.
2nd Class Air-Mechanic E. Lister.

Undated:

Previously Officially reported Missing, now Unofficially reported Prisoners of War.

Captain J. C. Leech, 8th (King's Royal Irish) Hussars, attached R.F.C.

Lieutenant E. G. S. Walker, Royal Flying Corps.

Undated, Indian Expeditionary Force:

Wounded.

Second Lieutenant R. V. de Halpert, Corps of Interpreters, Indian Cavalry Corps, attached R.F.C.

Lieutenant A. H. Parker, 1st Punjab Volunteer Rifles, attached R.F.C.

Another R.F.C. Honour.

IN a supplement to the LONDON GAZETTE it was announced that His Majesty the King had been graciously pleased to approve of the undermentioned reward for gallantry and devotion to duty:—

Awarded the Military Cross.

Second Lieutenant Oliver Dwight Filley, Royal Flying Corps (Special Reserve).

For conspicuous gallantry on July 6th, 1915, when he and his observer were co-operating with our artillery. On two occasions,

although they were not in a special fighting machine, they attacked German aeroplanes, and, after driving them away, resumed their artillery work. Finally, two hostile aeroplanes came up simultaneously, and, although they had only five rounds of ammunition left, they at once proceeded to attack. In this encounter the observer was killed in the act of firing, and the engine damaged, but Second Lieutenant Filley landed safely in our lines.

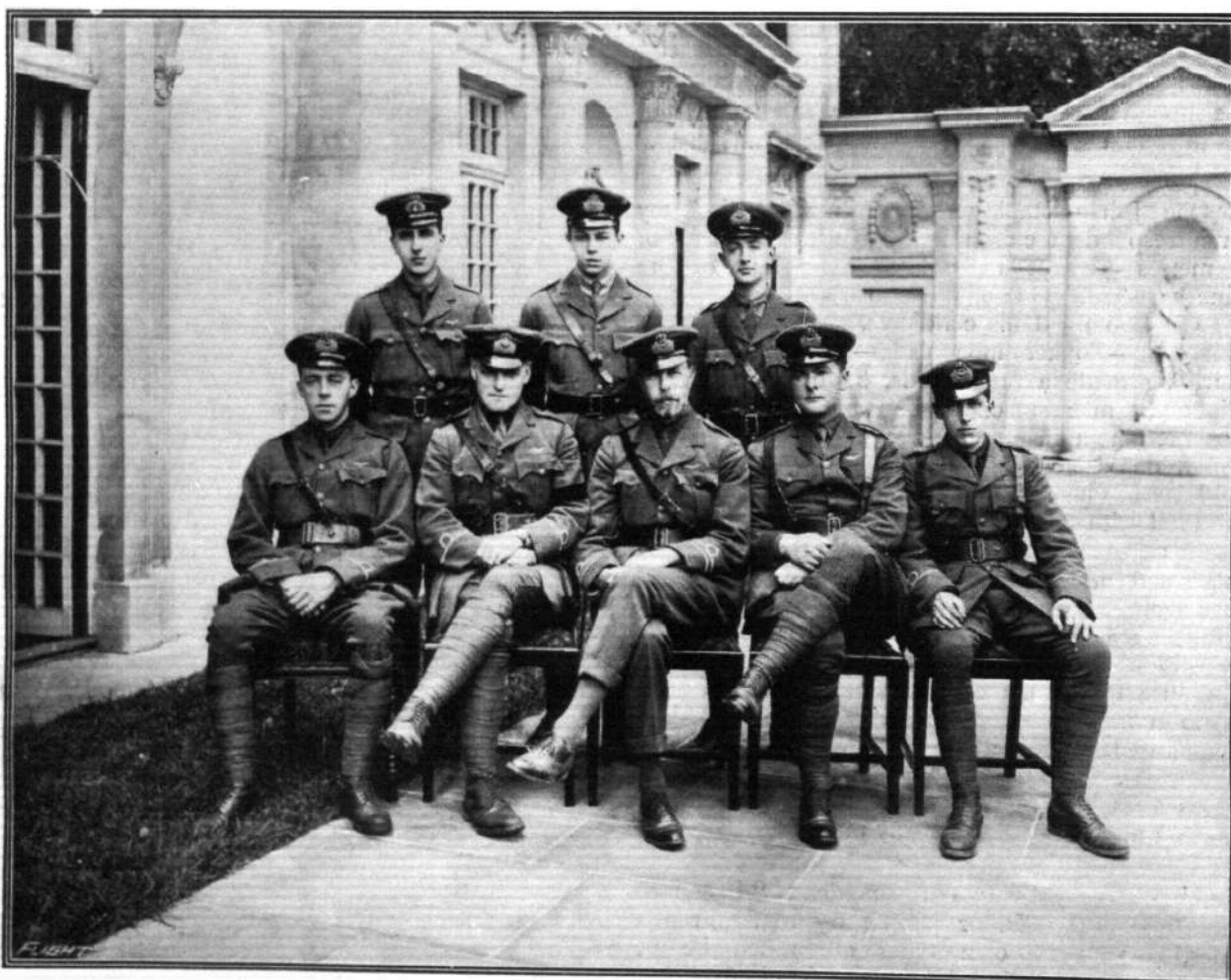
The Explosion at Wormwood Scrubs.

THE Secretary of the Admiralty made the following announcement on Wednesday:—

"A hydrogen explosion occurred at the Wormwood Scrubs Airship Shed at 11 a.m. to-day. Two air-mechanics were killed and nine others injured, some severely. Some damage was done to the building."

Rewards for Destroying Zeppelins.

ADDING to the monetary rewards which have already been offered from various private sources for the destruction of Zeppelins or other hostile airships, Lord Michelham has now announced that he will place the sum of £1,000 at the disposal of any British aviator or aviators, to do with as they shall think fit, who shall succeed in destroying a Zeppelin whilst in the air. This prize will be given for each and every Zeppelin so destroyed up to ten. The offer is open to both branches of the Service. In the event of more than one aviator being engaged in the destruction of the same Zeppelin the prize will be divided.



Group of Officers of No. 4 Section, Kite-Balloon Service, R.N.A.S.—Back row, left to right: Sub-Lieut. M. Gill, R.N.V.R., Flight Sub-Lieut. J. H. D. Grant, Flight Sub-Lieut. R. W. Lane. Front row, left to right: Flight Sub-Lieut. H. S. Bompas, Flight Sub-Lieut. B. Gregg, Flight-Lieut. The Hon. G. Rollo, Flight Sub-Lieut. W. H. S. Sharfe, Flight Sub-Lieutenant Stanley Bell.

THE INTERNAL WORK OF THE WIND.

THERE has, perhaps, been no more important set of observations carried out in what may possibly be termed the environs of the subject of flight, than those made by Professor Langley on the normal state of the atmosphere, which resulted in the publication of his famous treatise entitled "The Internal Work of the Wind." His first public communication of the result of his researches was embodied in a paper read by title to the American National Academy of Sciences in 1893, and delivered in full by the author before the Chicago Conference on Aerial Navigation of the same year. It has been now for some time available in a book published by the Smithsonian Institute.

At that conference, the subject of soaring flight *i.e.*, continued flight without power, was one of those most seriously discussed by the delegates, and it was in relation to this aspect of flight that Professor Langley's investigations at that time appeared to have their most important bearing.

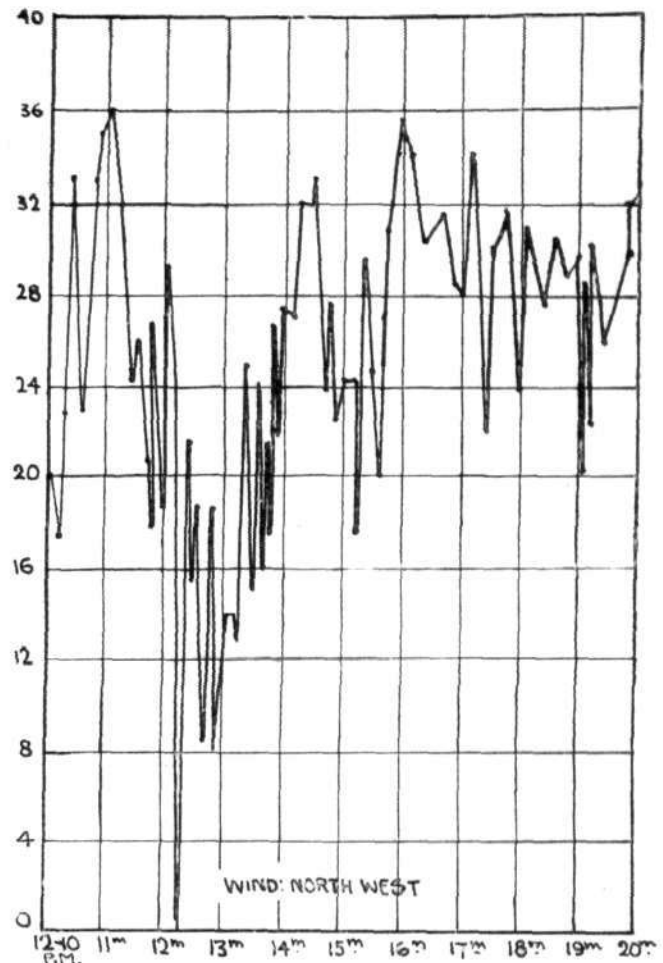
Wind Fluctuations.

Professor Langley's arguments were based on the results of experiments which resulted in his discovery that there is no such thing as a steady wind. He made observations on the state of the atmosphere, and as the result of many carefully conducted experiments, he found that the changes which took place in what had hitherto been regarded as a steady wind were phenomenally abrupt, of frequent occurrence, and of altogether greater magnitude than he would have believed possible. As an example, a case is cited in which a wind, commencing at 23 miles an hour as measured by an ordinary standard anemometer, such as is used by the Weather Bureau, fell during the course of the first mile to a little over 20 miles an hour in a perfectly even manner such as would be represented by a straight line on paper. With records made simultaneously by Professor Langley's special instrument, however, this same wind was shown to be anything but steady for even an instant of time during the same period. Starting at 23 miles an hour, the wind rose within 10 seconds to a velocity of 33 miles an hour, and within 10 seconds more fell to its initial speed. In the subsequent 30 seconds it bounded up by three stages to 36 miles an hour, and then fell in 10 seconds to a little over 24 miles an hour, at which speed it remained with only a relatively slight increase for the next period of 10 seconds, when it fell to 18 miles an hour, bounded up to 27 miles an hour and down again to 19 miles an hour in the space of about half a minute. Midway during the course of this particular strip of record, which all told only includes a period of 13 minutes, the wind

actually fell to zero from a speed of 24 miles an hour, and then as suddenly jumped to 22 miles an hour, after which it zigzagged about between 5 and 20 miles an hour, for the remainder of the period.

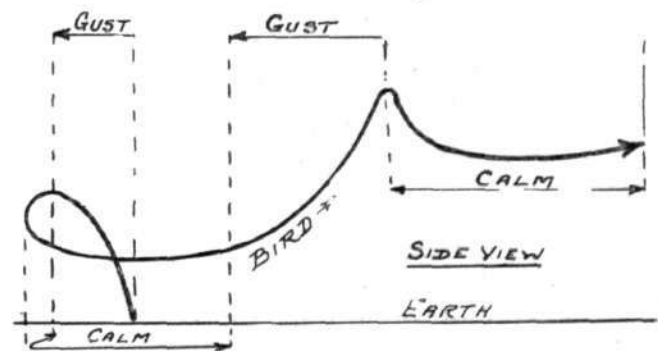
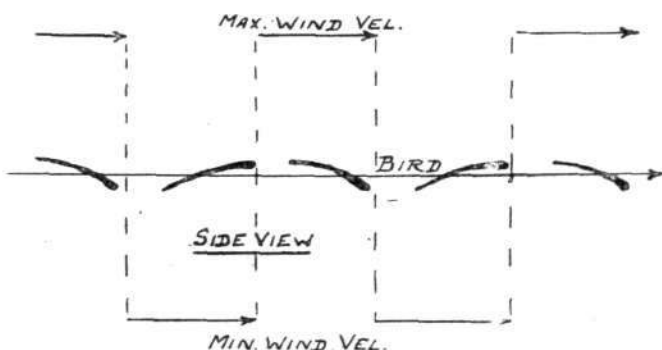
Langley's Theory of Soaring Flight.

This is merely an example of a very short record, but Professor Langley stated that it was a very typical example



Wind fluctuations as Langley found them to exist by means of his delicate instruments. The horizontal divisions each represent only one minute of time, the vertical scale represents wind velocity, and the zig-zag line indicates the wind fluctuation.

of what he found to be the case on every occasion, and it was on the assumption that this incessant change represented the true state of the atmosphere at all times that



Diagrams illustrating the application of Langley's theory of the "internal" work of the wind to the soaring flight of birds.—The diagram on the left indicates a bird's wing extracting energy while moving with the wind, by inclining first one way and then the other. The diagram on the right illustrates how a bird might make head-way against the wind.

he based his theory of soaring flight. Briefly explained, Professor Langley built up his theory in the following way. He considered the case of a plain surface which was moving in the same direction as the wind at a velocity which was equivalent to the mean of the maximum and minimum instantaneous velocities of the wind itself, and he went on to show how, when the actual velocity of the wind was greater than the velocity of the plane, it will lift the plane from behind if the rear edge is tilted, whereas when the plane was travelling faster than the wind itself it could still obtain a lifting effect by tilting the front edge so as to take advantage of what was virtually a reversal in the wind's direction in respect to the plane.

The next step was to show how a body may rise and travel against the wind, which was done by assuming that during the first period of maximum gust a definite altitude is attained at the expense of some drift, but that the leeway is made up during the subsequent comparative calm by converting the potential of altitude into kinetic energy by gliding. When the next gust arrives, part of the altitude has been lost at the expense of velocity in the direction of motion against the wind, and consequently there is no actual drift during this period of gust which results as before in an increase in altitude, and on this assumption the device continues to make headway against the wind merely by suitably setting its angle of inclination to take advantage of the internal work.

In applying to his theory the case of bird flight, Professor Langley made the simple assumption that "the bird, by some tactile sensibility to the pressure and direction of the air, is able, in nautical phrase, to see the wind, and to time its movements so that without any reference to its height from the ground it reaches its descent to near the end of the more rapid wind pulsation"; but the writer believes that to cause these adaptive changes in an otherwise inert body with what might almost be called instinctive readiness and rapidity, does not really demand intelligence or even instinct, but that the future aeroplane may be furnished with a substitute for instinct in what may, perhaps, allowably be called a mechanical brain, which yet need not be intricate in its character.

Interesting in itself, Professor Langley's theory of the internal work of the wind gains its great charm from the startling final deduction that the aeroplane of the future will be able to sail round the world with as much fuel as can be readily carried on board, for it will only need to use its engine power in emergency.

Professor Langley's paper was naturally the subject of much criticism, and while many investigators were found to corroborate his statements relating to the incessant change in the wind, many also failed to see therein sufficient evidence of internal work such as he had described.



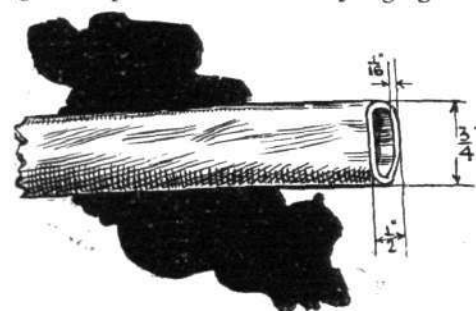
THE WING BONE OF AN ALBATROSS.

AN EXAMPLE OF NATURE'S CONSTRUCTIVE GENIUS.

MERE man when he tries to imitate with mechanical appliances the flight of birds, finds himself hampered at the outset with the tremendous difficulty of making his machines light and strong, and in the engineering world at large where the same trouble is frequently met, one of the greatest advantages, made possible by the development of the splendid machine tools which the world now possesses, is the general adoption of the hollow section. Nature, however, has been in no such need of special appliances to attain the same end, although doubtless the evolution was equally slow, and an example of natural hollow construction, which should be interesting to readers of *Flight*, is that shown by the accompanying sketch of a portion of the wing bone of an albatross.

The interest in this particular specimen of a hollow bone lies of course in the fact that it comes from a bird which habitually performs one of the most interesting modes of flight. The albatross is a great exponent of soaring, that is to say of utilising upward winds and tubular air-currents as a source of energy whereby it relieves itself of the necessity of flapping. Commonly in the habit of progressing on "rigid pinions," as the mode is often described, causes the albatross to resemble in principle the flying machine of the aeroplane type, and since the albatross is one of the

largest species of soaring birds, it forms a particularly suitable subject for comparison. It is unfortunately impossible to say what was the size of the albatross from which the piece of wing-bone in our possession was taken, but the average spread of these birds is in the order of 8 to 10 feet. The chord of the wing is about 9 inches, thus giving an aspect ratio of 12. Judging from such



data as is available, they appear to support well over 2 lbs. per square foot of wing area. It will be noticed from the dimensions of the bone that the thickness is given as one-sixteenth of an inch, and considering the external dimensions of the section it can hardly be said that nature has been extravagant in the material of which she makes her "main spars."



Dutch Fire on Aeroplanes.

AT eight o'clock on the morning of the 21st inst., according to a Central News message from Amsterdam an aeroplane of unknown nationality passed over Sas Van Gent (Holland) at an altitude of about 550 yards, flying in a north-westerly direction. While crossing the frontier the aeroplane was heavily fired upon.

Anti-Aircraft Guns for U.S. Submarines.

ADVICES from New York state a three-inch disappearing gun for submarines has been perfected by the Ordnance Bureau of the United States Navy, and in future all American under-water craft

will be equipped with such weapons or surface fighting. It has been fitted for very high angle fire against aircraft.

Two Danish Pilots Killed.

THE TIMES correspondent at Copenhagen on Tuesday reported that during that afternoon two Danish officers, Captain Mnter and Premier-Lieutenant Hoeck, were travelling on a seaplane, which capsized outside the Copenhagen fort Provstenen. They fell on the shore. The former was severely injured, and the latter, who was generally considered to be Denmark's first airman, was killed.

AIRCRAFT AND THE WAR.

In the *communiqué* issued in Berlin on the 21st, it was stated:—

"German airmen compelled a French aeroplane to descend near Bapaume. The aeroplane fell into our hands undamaged."

"Colmar was bombed by enemy airmen. Ten bombs fell on houses and in the streets. One civilian was killed and a woman injured."

The following story of a successful fight with a new type of Aviatik, as told by a French machine gunner, appeared in the *TEMPS*, of the 21st:—

"We had just let go an Albatros, which seemed rather a shy bird, when this new type of Aviatik appeared on the horizon. We let him rise to a certain height. When he was 7,500 ft. up we started in hard pursuit."

"When within a hundred yards I opened fire with the splendid English quick-firer I use. Suddenly the German pilot put his hand to his head and collapsed. He was only 50 yards from me, so I saw him plainly. I aimed at the other, who threw up his hands."

"It was to no purpose. I fired again, not wishing this ill-omened bird to get home to roost. One more shot, and the biplane turned over on fire, and fell headlong amid a cloud of smoke close to the Aisne. I was so happy. It was the fiftieth time I had pursued a Boche aeroplane, and the first time I had brought one down."

According to the *ECHO BELGE*, a Zeppelin flying in a westerly direction was seen from Ameland on the 20th. It appears to have been one of the latest types of dirigibles, larger than any seen hitherto.

The *JOURNAL* reported the following:—

"On July 20th a German aeroplane again bombarded Sainte Menehould and Neuville-au-Pont. During an artillery action the German aeroplane flew over the town and directed the fire of the enemy's batteries. French guns fired on it, and two aeroplanes were sent up in pursuit. After a chase the German machine was obliged to descend in the French lines."

In the German *communiqué* of the 22nd inst. there was the following:—

"An enemy biplane was brought down by our fire in the Parroy Wood. In an aerial fight over the Münster valley three German airmen gained a victory over three adversaries, two of whom were forced to descend in the Thann valley."

The *TIMES* correspondent in Paris, writing on July 23rd, regarding the work of the French flying services, said:—

"A feature of the operations along the front during the present month has been the active use by the French of their air services and the many indications given of the progress which has been accomplished in this branch of the service since the outbreak of the war. Realising that for fighting purposes the chief mission of the aeroplane is to act like a gun of immense range, and that bombardment requires swarms of aeroplanes and not an isolated machine, the French have equipped and organised a number of air squadrons with the object of disturbing and destroying the enemy's communications, either during or on the eve of military developments, so as to impede the arrival of men and shells from the reserve points during the progress of operations."

"For this purpose the squadrons are composed of three different types of machine, the names of which indicate the special duties of each type. They are the bombplane, the gunplane, and the chaser plane. These squadrons, in spite of the boisterous weather which has prevailed throughout the month, have raided no less than ten important German railway centres in the area of operations, throwing over 400 bombs in their flight, while the chaser planes engaged any protecting enemy aircraft that tried to interfere with the operations. The centres chosen for bombardment were mostly situated in the rear of the Crown Prince's army, and it is hoped that, thanks to the raids, some of his apparently inexhaustible stock of asphyxiating shells may have been destroyed."

"A glance at the map will show how effectively the air services are able to act as an extension of artillery in upsetting the enemy's transport. Thus Challerange, an important junction on the Vouziers-St. Ménéhould and Vouziers-Apremont Railways, whence are served the requirements of the army operating in the west of the Argonne; Arnaville and Bayonville, to the south west of Metz; Vigneuelles les Hattonchattel, the railway centre for the south-eastern armies operating against Verdun; Autruy, to the north of the Argonne, and Conflans-en-Jarnisy, on the Verdun-Metz railway, have been regularly bombarded by aerial squadrons, which in some cases have numbered 35 air machines."

"The bombardment of Conflans-en-Jarnisy is perhaps the most important of these operations. In time of peace it was at Conflans that the mineral wealth of the Briey district was distributed over the railway systems of the country. The station contains miles of railway sidings and sheds and was admirably suited to the military requirements of the enemy. The railway extends from this point in the direction of Nancy, Metz, Thionville, Villerupt, Mezières-Charleroi, and Verdun. Since the occupation the Germans have constructed an additional line which links up the German line with the French railway at Joeuf."

The Milan correspondent of the *MATIN* on the 23rd reported:—

"An Austrian aeroplane which attempted to approach Udine (west of the Isonzo) in order to bombard it had to come down in Italian territory. A captain and lieutenant were wounded and captured."

In the German *communiqué* of the 23rd there was the following:—

"In an aerial fight over Conflans (west of Metz) we destroyed an enemy battle aeroplane."

"Our airmen dropped bombs on the railway triangle at St. Hilaire, in Champagne, and forced the enemy airmen to retreat. The barracks at Gerardmer (Vosges) were also bombarded."

In the *JOURNAL* of the 23rd there was the following:—

"On Tuesday a German Taube again bombarded Saint-Menehould and Neuville-au-Pont during an artillery action. The German aeroplane flew over the town, and directed the fire of the enemy's batteries. French guns fired on it, and two aeroplanes were sent up in pursuit. After an exciting chase the German machine, which was hit several times, was obliged to descend in the French lines."

The *DAILY MAIL* correspondent at Athens on Sunday reported:—

"It is reported from Mitylene that Allied aeroplanes have been very active at Smyrna. Bombs were dropped on the gasworks, plunging the town into darkness."

The following account of how an aeroplane saved a British transport was printed in the *MATIN* on Monday, the details having been received from its correspondent at Seddul-Bahr:—

"On the morning after the French supply-ship 'Carthage' had been sunk there an aviator, who was flying several hundred feet above the sea off Cape Helles, saw a black spot in the water beneath him."

"Circling round, to enable him to observe it more closely, he at last made out the form of a German submarine under water moving towards a British transport which was heavily laden with troops and munitions."

"Immediately the aviator flashed a wireless signal to the British, and then, swooping down to a few feet of the surface of the water, he dropped two bombs. These did no damage to the submarine, but taking warning, she sank to greater depths."

"When the enemy thought enough time had passed he raised his periscope above the surface. But the aeroplane was still circling close at hand, and once more a couple of bombs fell close alongside the black patch. Then the submarine finally disappeared."

A Reuter message from Dunkirk on the 26th stated:—

"A Taube this morning flew over Dunkirk and dropped some bombs, which caused insignificant material damage. Being pursued by French airmen, the Taube immediately made off."

"A Taube flew over Calais at two o'clock on Tuesday afternoon without dropping any bombs."

The following message was received from Petrograd on Monday:—

"A German aeroplane has dropped bombs on Warsaw in a vain attempt to destroy the bridge over the Vistula. There were several casualties among the civilians. Fragments of one bomb struck a tramcar, but only two of the passengers were injured."

The *MORNING POST* correspondent at Amsterdam on Tuesday reported:—

"During the last few days a German airship is regularly sighted off the Dutch islands. To-day again a Zeppelin was seen at Vlieland flying westward."

"It is reported that a French airman made a daring attack yesterday on German submarines lying in Ghent Harbour. The aircraft caused much uneasiness and was heavily fired at, but escaped."

AERIAL ARMIES OF THE FUTURE.

LECTURING on "the Command of the Air" at the Services Club, Stratford Place, on the 22nd inst., Mr. H. F. Wyatt indulged in some interesting speculations as to the future developments of warfare.

At the outset he said that he did not propose to talk about gas-bags or Zeppelins, or any other kind of lighter-than-air machines, because, whatever their importance at the present moment, he had not the slightest belief in their having any importance in the future. He believed that in about ten to fifteen years' time there would probably be no more Zeppelins. They would be entirely cut out through the development of the aeroplane.

Mr. H. G. Wells had recently suggested that 10,000 aeroplanes should be produced, and some experts seemed to think it might be possible to carry out such a scheme. What was wanted, however, in order to do the thing Mr. Wells desired was a different kind of machine of a great range, size, and carrying power. There was such a machine of Russian origin, and we were supposed to be working on the production of such a machine in this country. In the course of the next few years he expected there would be a number of machines of that type.

They must not ignore the march of invention, and then it became a matter of moral certainty that within a period—the exact length of which nobody could tell, perhaps five years, perhaps ten—there would be many thousands of great aeroplanes, unless in the meantime aeroplanes were superseded by some entirely different kind of heavier-than-air machine. Indeed, it was quite possible that the aeroplane was not the last word in aviation.

Supposing the war were followed by another one—10 or 15 years hence—and they had great fleets of such machines as he had suggested, probably many thousands owned by each nation, and capable of remaining 48 hours in the air, what would the effect of that be upon surface navies and armies? One of the great functions of our Fleet was to prevent the enemy's fleet from destroying our seaborne trade, and our Navy had admirably performed that function up till now.

But supposing they had these long-distance flyers in existence, capable of going from 100 to 150 miles an hour, and of dropping bombs with much more skilful direction than now. The surface navy would be cheated of its functions. As regards armies their function was to crush the powers of resistance in the armed forces of the adversary, but with the existence of such fleets of

aeroplanes as he had suggested armed forces would cease to be able to exercise their functions because they would not be able to defend any longer their countrymen and countrywomen of the cities.

It seemed to be absolutely inevitable that the functions of defensive armies would be gone before many years were over. Many things followed from that. If they could not fight a fleet of flying machines with a surface army or a surface navy, with what could they fight it? The present war had proved that it was fearfully difficult to hit an aeroplane. The only thing, therefore, with which they could fight a fleet of flying machines of the future would be another fleet of flying machines, and they came at once to aerial warfare as superseding surface warfare. There were curious results from that upon political lines. Compulsory service was required now in Europe to provide great masses of men for the firing line, and great masses of men were wanted because that had hitherto been the sole means of obtaining victory.

But men of considerable training would be required for the fleet of aeroplanes of the future, and they would get men whose lives would have to be devoted to the study of war—in other words, they would get the long-service soldier again. Referring to the present war, the speaker said that what was wanted more than anything else was the long-distance aeroplane. While no self-respecting nation would be the first to drop bombs on non-combatants, if another nation persisted in doing it, then what was before disgraceful became an absolutely imperative duty.

The effect of the Karlsruhe raid was considerable upon the Germans. If the British Government chose to make a great raid, in conjunction with the French, and scatter leaflets to the effect that every time the Germans raided non-combatants a return raid of that sort would at once be made and on a greater scale, he was convinced that we should have no more raids upon non-combatants. But the limit of our reply to Germany's raids was the limit of the radius of existing aeroplanes.

By aeroplanes which could travel 600 miles out and back again, we could reach Hamburg and play "Old Harry" with the place, while the Kiel Canal would not be beyond attack by a really long-distance aeroplane. Even if the cost of building big aeroplanes was three or four times the cost of the present machine, it would be worth while to build a thousand of them. It would pay for itself over and over again.

THE GOVERNMENT'S AIR RAID INSURANCE SCHEME.

In the House of Lords on the 21st inst. Lord Parmoor called attention to the Government's scheme of insurance in regard to damage to property which might result from bombardment or air raids. Great experience and a large amount of information had been obtained by the Committee which had been assessing compensation in the case of such raids, of which he was a member, but the Government's scheme had been developed without any reference to that knowledge. The scheme was unfair, and the proposed contributions were most unreasonable. In consideration of the insurance offices placing their staffs at the disposal of the Government, the companies would receive 15 per cent. of the gross premiums. That was forty-five times what the cost should be, according to the experience of the Committee of which he was a member.

The schedule of rates put an absolutely absurd burden on the householder, the person in occupation of premises, and the owner of stock. The premium on buildings, 3s. to 4s. 6d., was cent. per cent. too high. Country districts were not aimed at by Zeppelins. It had been discovered that where a bomb had been dropped amongst crops, there was no instance of more than 4s. or 5s. worth of damage. The experience of the committee which had assessed compensation was gained at a time when the damage was likely to be heavier than in the future.

The Earl of Camperdown said, in view of the small amount of knowledge the country had on the subject, it was imperative that additional information should be obtained from the Government. It seemed to him it would have been better if the Government had followed the recommendations of the committee of which Lord Parmoor was a member.

Lord Southwark, while admitting that great satisfaction had been expressed in the City and in commercial circles at the institution of a scheme of insurance of any sort by the Government, thought that, as the risk was so small, it would have been better if the State had assumed the whole liability, and had treated such events as they would have treated the loss of a Dreadnought.

The Duke of Devonshire said he was afraid he could not say very much to satisfy the critics of the Government. The scheme was

Fatal Accident in France.

ACCORDING to the DAILY MAIL Paris correspondent, one of the aeroplanes that patrol the air over Paris caught fire at 7.30 on Wednesday night and fell in flames on to the roof of a shed in a

put into operation on the 19th, and a considerable amount of business had been transacted. He hoped the scheme would be allowed a fair trial. He would see that the criticisms which had been passed were conveyed to the President of the Board of Trade.

On the 26th inst., Lord Parmoor asked on what statistics and facts the rate of premiums chargeable to a farmer who desired to insure against the risk of damage from aircraft or bombardment had been fixed. He said that the loss of one lamb, one pony and one pig had been the entire injury caused to live stock in this country by bombardment or air raids. Of course, a shell might do great damage, and farmers could not afford to neglect to insure, but the premiums under the Government scheme were extraordinarily high.

The Duke of Devonshire said the scheme had been formulated by a special committee who had acted on the best possible advice.

The Earl of Camperdown asked the Government to postpone the starting of their insurance scheme to some date which would give reasonable notice to owners of property that the Government would not pay any compensation to those who had not so insured. It had been stated that notice had been given publicly by advertisement in the *Times*. Could that be regarded as public notice? It was not giving owners of property fair notice that it was necessary for them to take out insurance against this sort of damage by a scheme which came into force on the very day it was published.

The Duke of Devonshire replied that it had been decided, after the fullest consideration, to adopt a policy of insurance instead of indemnity. There might possibly be hard cases, but the Government attached the greatest importance to bringing in the scheme at once. They felt that if indemnity and insurance were to run *pari passu* the owners of property would defer taking out insurance until the last possible moment. The communication relating to the scheme appeared in all the London Press and in a considerable number of provincial papers. Steps were also taken by the agents of insurance companies to bring the matter to the notice of their clients and the public generally. A considerable amount of business had already been done.

piece of waste ground near the Porte de Versailles. One of the two Frenchmen in the machine jumped out just before the aeroplane crashed down and was very seriously hurt. The other fell with the machine and was burned to death.

Models

ALL communications in connection with this section should be addressed to the Model Editor, *Flight*, 44, St. Martin's Lane, London, W.C. Correspondents are requested to write on one side of the paper only.

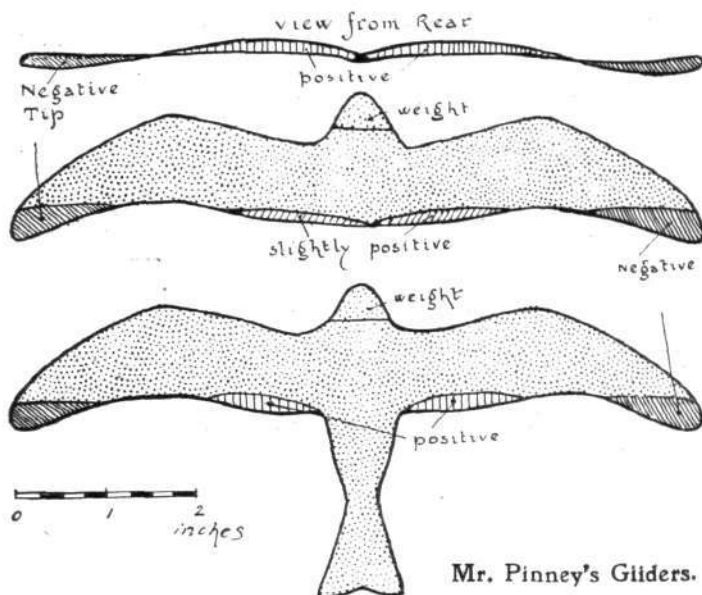
Natural Gliding Forms.

MR. KINGSLEY W. G. PINNEY writes from Glasgow as follows:—

"I notice that in Mr. Bartlett's excellent article published in *Flight* on June 25th it is stated that even a small tail-plane offers a considerable drag and therefore greatly reduces the speed.

"To observe this I recently made two gliders of 7½ in. span, shaped somewhat like a gull. They were similarly shaped, except that one had no tail.

"From the glides obtained I find, that although there is very little difference in the gliding angles, the tailless glider is nearly



Mr. Pinney's Gliders.

twice as fast as the other. Perhaps on account of this speed atmospheric disturbances have less effect on the tailless model."

Enquiries.

A reader living at Manor Park is anxious to get into touch with any reader who has designs of an aeroplane driven by compressed air; cylinder, 24 ins. by 3 ins.; propeller, 12 ins. diameter.

A National Competition in U.S.A.

In view of the great revival of interest in model flying which is now manifest in various parts of the United States, the Aero Club of America has organised a National Aeroplane Competition on somewhat ambitious lines, and as it may prove helpful to some secretaries on this side, we give the scheme and the rules below. The competition commences in August and ends in October. It is to consist of three monthly model aeroplane contests, to be held in every part of the country simultaneously. These contests, which are to be open to all model clubs in America, are to be timed and

judged by officials of the large aero clubs, and wherever there are no aero clubs by representatives of the Aero Club of America.

The contests are to be held on any day of the third and fourth weeks of each month, beginning with August next, at places selected by the model clubs. They are to be open to all Model Aero Clubs throughout the country, who are to hold elimination contests, at their own convenience, to pick out four representatives to represent their club at the official contests. The four representatives need not necessarily be the same in each contest.

The nature of the contest is to be different each month, as follows:—

1st Month—Distance, launching from hand. (Any type models.)

2nd Month—Duration, starting from the water, open to model flying boats and hydroaeroplanes, the flying boats to be allowed 20 per cent. in addition to the duration achieved.

3rd Month—Duration, starting from ground. (Any type models.)

Cash prizes of \$50, \$25 and \$10, offered by the Aero Club of America, will be awarded to the individual members of the various clubs making the best records each month. The silver Villard Trophy, given by Henry S. Villard, will be awarded to the club whose members collectively make the largest score during the three months—this to be judged by the point system.

A club becomes the owner of the trophy when it has been won for three consecutive years by its members—the rules governing the winning of the trophy will be progressive in accordance with the progress made in model flying.

RULES.

1. The contests are to be held any day during the third and fourth weeks of each month.

2. Each club is to select its own place for holding the contests, and make all arrangements with the local committee of the Aero Club appointed to judge its events.

3. Each club is to hold its own elimination trials during the first two weeks of each month, and when ready to make the official trials notify and make all arrangements with the committee of the Aero Club appointed to judge its events.

4. Only four representatives will be allowed to compete in each contest, but these need not be the same each month.

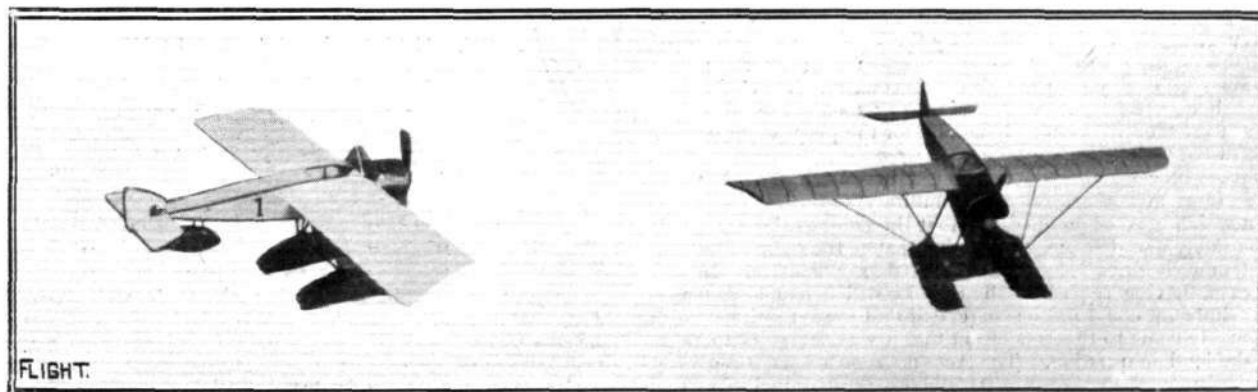
5. Each club is to co-operate with its local judging committee and arrange things so that the judges will be relieved of all the routine and will only have to officially judge and pass on the events.

6. Each contestant will be allowed three trials in each event and no more.

7. Models may be repaired but not changed during each contest.

8. All distance contests are to be measured with a steel tape, each club supplying its own steel tape (officially passed on by the judges) and arranging its events so as to facilitate quick and accurate measuring of the distances. It is the official duty of the judges appointed to see that this is done carefully and accurately. In the case of the winner in each club the place of landing of his model is to be marked by a peg so that the distance can be measured off again from the starting-point and verified a second time by the judges.

9. All duration events are to be timed with accurate stop watches, in the manner usual for such events.



An interesting scale model 80 h.p. Gnome-Morane-Saulnier hydro-aeroplane by Mr. Percy W. Ruff.

LEGAL INTELLIGENCE.

An Aviation Company v. The King.

ON the 23rd inst. the considered judgment was given by the Court of Appeal in the above case, a report of which appeared in our last issue and upon the result of which we commented. It emerges from the proceedings in court that compensation is to be paid to the appellants in this particular case, "by grace," which will no doubt be some comfort to those concerned. But our contention for a revision, upon principle, of such feudal rights still clinging to the majesty of the law remains. The judgment of the Court of Appeal is as follows:—

The Master of the Rolls said, in deciding the case, the Court took judicial notice of the fact that this country was in a state of war, that there had been raids by Zeppelins and other hostile aircraft, and that certain places on the East Coast, if not the South Coast also, had been the objects of attack by the enemy's fleet. In these circumstances the authorities had, to a very great extent, exercised the right now claimed. They asserted that the Royal prerogative authorised them to take possession of the land, and also that what they had done was justified by the Defence of the Realm Consolidated Act, 1914, and the regulations of November 28th, 1914, made thereunder:—

Their evidence was to the effect that the occupation of the land was necessary for public safety and the defence of the realm. The Royal prerogative was part of the common law of this country. It was laid down that when enemies were on the sea coast "it was lawful for the Crown to go upon any land adjoining the coast and make trenches or bulwarks for defence, for every subject benefits by it."

The question of the prerogative was not definitely challenged by counsel for the suppliants, but they said it was limited to a case of actual invasion, when immediate action was necessary. In his opinion there was no justification for that limitation. To postpone action until the enemy had landed would, or might, be fatal to the security of the realm. If it be said that the prerogative could not extend to an aerodrome because aeroplanes were not known in the reign of Richard I., when this power of prerogative was conferred, the answer was to be found in a decision in a case in 1905, when this Court held that the prerogative applied to what was reasonably necessary for repelling invasion "at the present time."

The prerogative could not be interfered with or taken away except by plain language or necessary implication. The Defence Act of 1842 in no way affected the prerogative right. The Act of 1914, and the regulations, expressly authorised the "competent authorities," for the purpose of public safety and defence, to take possession of land without compensation, and construct military works thereon. It therefore justified what had been done in this case. Consequently the appeal failed, and must be dismissed. In order to avoid misconception, he desired to say that the Crown had expressed its willingness to pay to the suppliants such a sum as was reasonable, the amount being referred to the commission over which Mr. Duke, K.C., was presiding. That, however, did not affect the legal question.

Lord Justice Pickford, who agreed, pointed out that by regulation 62, a "competent authority" embraced any commissioned officer not below a lieutenant-commander in the Navy, or a field officer in the Army, selected by the Admiralty or the Army Council. In his view the argument for the suppliants had paid too little attention to the change that had come about in the implements of war, and the method of making war.

Lord Justice Warrington also agreed. His Majesty, he said, claimed no right or interest in the land, except to take and use it for so long and in such manner as might be necessary for public safety and defence during the present war. The exercise of the right claimed gave no legal claim to possession, and the authorities were willing to pay such sum as might be decided upon in such cases. It had been urged that the right claimed by the Crown was confined to doing what was necessary for the conduct of actual military operations against an enemy on the soil of this country. He could not think that that could be so. So to limit the prerogative would be in these days to render it practically useless for the purpose for which it was entrusted to the King.

The circumstances under which it might be exercised must vary with the times and the advance of military science. The only condition which must be fulfilled was that the act must be necessary for public safety and defence, and on that matter the opinion of the "competent authorities" should be accepted as conclusive. In the present case, having regard to the attacks which had been made upon our shores, it could not be contended that the authorities could not reasonably come to the conclusion that it was necessary to take and use the land in question. The Act and regulations, by giving an unlimited power, had suspended all restrictions, including the liability to pay compensation.

The appeal was therefore dismissed, with costs.

The 300 h.p. Green Engine.

By gross carelessness on the part of a printer's reader two errors occurred in the article on the 300 h.p. Green engine which appeared in our last issue. The 13th line down in the second column should have read: "They are driven from the crankshaft by worm gearing"; while in the second line from the end of the article the figure should have been 1,300 r.p.m. Both errors were obvious from the context, but for accuracy's sake we make this formal correction.

Photographs of R.N.A.S. Groups.

THOSE of our readers who are desirous of obtaining copies of the excellent series of the group photographs of officers and men in the Royal Naval Air Services, such as those which appear on pages 559 and 560 in our current issue, should apply to Mr. F. N. Birkett, 97, Percy Road, Shepherd's Bush. He is supplying, unmounted, 12 ins. by 10 ins. prints at 2s. 6d. each.



NEW COMPANIES REGISTERED.

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Applied for in 1913.

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25,937. A. HITZEROTH. Flying machines.

Applied for in 1914.

Published July 29th, 1915.

2,508. E. SANCHIS. Envelope for aerostats.
16,238. G. VON SKIDLITZ. Rocking-wing aeroplanes.
18,874. G. M. CAPELL. Air propellers.
19,702. ETAB. DE DION BOUTON (SOC. ANON.). Metal sheathed propellers.

Applied for in 1915.

Published July 29th, 1915.

2,204. G. CAPRONI. Flying-machines.
3,222. W. T. E. BARKER AND DAVID ROWELL AND CO. Air propeller blades.
5,986. W. M. COOPER. Engine mounting for aeroplanes.

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